

THE ATHENÆUM

Journal of English and Foreign Literature, Science, the Fine Arts, Music and the Drama.

No. 2552.

SATURDAY, SEPTEMBER 23, 1876.

PRICE
THREPPENCE
REGISTERED AS A NEWSPAPER

BETHNAL-GREEN BRANCH MUSEUM.—The COLLECTION OF PICTURES, so well known as the DULWICH GALLERY, has been lent to the Governors, while the Gallery is under repair, to the Bethnal Green Museum, and is now OPEN to the Public. The Museum is Open Free on Mondays, Tuesdays, and Wednesdays, from 10 A.M. to Ten P.M.; and on Wednesdays, Thursdays, and Fridays (Students' Days), from Ten A.M. to Six P.M., on payment of 6d. each person.

NATIONAL ART TRAINING SCHOOL, SOUTH KENSINGTON. PUBLIC ART CLASSES IN CONJUNCTION WITH THE TRAINING SCHOOL.

The NEXT SESSION will commence on the 2nd of OCTOBER. Separate Classes, open to the Public on payment of Fees, are established for Students of both Sexes; the Studies comprising Drawing, Painting, and Modelling, as applied to Ornament, the Figure, Landscape, and Still-life.

Candidates for admission, who are not already registered as Students of the School, must pass a Preliminary Examination in Freehand Drawing of the Second Grade. Special Admission Examinations will be held at the School, at 10 A.M. and 1 P.M., on the 26th of September and the 3rd of October, and at frequent intervals during the Session. Application for information as to Fees, &c., and for admission, should be made to the Secretary, Science and Art Department, on or after the 26th of September, to the Registrar, at the School, Exhibition-road, South Kensington, S.W.

By order of the Lords of the Committee of Council on Education.

NOTICE.—ROYAL SCHOOL OF MINES, Jermyn-street, London.—THE TWENTY-SIXTH SESSION will BEGIN on MONDAY, the 2nd of October.—Prospectuses may be had on application. **TRENHAM REEK'S, Registrar.**

SOCIAL SCIENCE CONGRESS, LIVERPOOL.—OCTOBER 11th to 18th.—President: The Most Hon. the MARQUIS OF HUNTLEY.—Presidents of Departments: 1. Jurisprudence, Farmer Herschell, Esq., Q.C., M.P., &c. Education, Rev. R. S. Fiddes, Esq., D. D., Health, Thomas Hawtrey, Esq., C.B., &c. Economy and Trade, G. J. Shaw Lefevre, Esq., M.P., &c. Art, E. J. Poynter, Esq., R.A. President of Council, G. W. Hastings, Esq., Chairman of Department of Crime Section, T. B. L. Baker, Esq.—Full particulars may be had at the Office of the Congress, 1, Adam-street, Adelphi, London; or Town Hall, Liverpool.

BRISTOL MUSICAL FESTIVAL. COLSTON HALL. OCTOBER 17th, 18th, 19th, and 20th, 1876.

Madame Titiana. Mr. Edward Lloyd. Mad. Albani. Mr. J. C. M. P. E. Education. Madame Edith Wynne. Mr. Harper Kearton. Madame Patey. Mr. Maybrick. Madame Trebelli-Bettini. Herr Behrens. "Elphig," Verdi's "Requiem." "Fall of Babylon." "Hymn of Praise," and "Messiah." Miscellaneous Concert, with Symphony, each Evening. BAND and CHORUS of upwards of 400 PERFORMERS. Organist, Mr. G. Riech; Chorus Master, Mr. A. Stone; Conductor, Mr. Charles Halle. The Ticket Office will be Opened at COLSTON HALL on MONDAY, September 19th.

NATIONAL ACADEMY for the HIGHER DEVELOPMENT of PIANOFORTE PLAYING, 5, Weymouth-street, Portland-place.

President.—MR. FRANKLIN TAYLOR. Director.—MR. OSCAR BERINGER. Pianoforte.—Messrs. Franklin Taylor, Walter Bache, Fritz Hartwig, C. Gumbert, and Oscar Beringer. Harmony.—Composition.—Messrs. F. Prout, B.A., and R. J. Hopper. The Academy is for Amateurs and Professional Students. Fee, Six Guineas per Term. NEXT TERM commences on OCTOBER 2nd. Entrance Days, SEPTEMBER 26th and 27th, from 10 to 5. For all particulars address the Director.

EXHIBITION of CABINET PICTURES in OIL, Dudley Gallery, Egyptian Hall, Piccadilly.—NOTICE to ARTISTS.—The day for taking in Pictures for the TENTH WINTER EXHIBITION will be MONDAY, the 2nd of October, from 10 A.M. to 5 P.M. The Regulations can be had on application to the SECRETARY, at the Gallery.

CRYSTAL PALACE PICTURE GALLERY, open all the Year round, for the Reception and Sale of Pictures by the British and Foreign Schools.—For particulars apply to Mr. C. W. WASS, Crystal Palace.

MR. BRINLEY RICHARDS will give Two Lectures on NATIONAL and ANCIENT MUSIC (with Vocal and Instrumental Illustrations), at the Mechanics' Institute, FLEETWOOD, September 27 and 28.—Letters to be addressed to his Residence, St. Mary Abbott's-terrace, London.

MR. HENRY BLACKBURN'S LECTURES.

SUBJECTS. 1. "The Art of POPULAR ILLUSTRATION," illustrated with large Diagrams, &c., for Literary Institutions. 2. "LIFE in ALGERIA, or Sketching in Sunshine," with a Series of Sketches, occupying an area of upwards of 300 feet. Mr. Henry Blackburn, Editor of "Academy Notes," &c., will repeat the above Lectures in the Season 1876-7. For Particulars and Dates, apply to the "Lecture and Press Bureau," 15, Russell-street, Covent-garden; or to Mr. BLACKBURN, at the Garrick Club.

LECTURES on MINERALS and ROCKS.—Prof. TENNANT, F.R.S., will give Two Courses of Lectures on MINERALOGY and MINERALOGY, at King's College, London; One Course on Wednesday and Friday Mornings, from Nine to Ten o'clock; the other Course on Thursday Evenings, from Eight to Nine. The Lectures will commence on WEDNESDAY, October 11, and will be illustrated by a very extensive Collection of Specimens, chiefly from his Private Cabinets. Persons unable to attend Public Lectures can have Private Instruction in Mineralogy and Geology of Prof. TENNANT, at his Residence, 14th, Strand, W.C.

LONDON SOCIETY for the EXTENSION of UNIVERSITY TEACHING.—A Course of Twenty-one Lectures on MINERALOGY and MINERALOGY, at King's College, London; One Course on Wednesday and Friday Mornings, from Nine to Ten o'clock; the other Course on Thursday Evenings, from Eight to Nine. The Lectures will commence on WEDNESDAY, October 11, and will be illustrated by a very extensive Collection of Specimens, chiefly from his Private Cabinets. Persons unable to attend Public Lectures can have Private Instruction in Mineralogy and Geology of Prof. TENNANT, at his Residence, 14th, Strand, W.C.

A GENTLEMAN, lately engaged as Assistant-Editor, desires similar EMPLOYMENT, or Secretaryship, or as amanuensis. Good references.—Address K., care of Mr. Hayes, 17, Henrietta-street, Covent-garden, W.

TO CLERGYMEN and GENTLEMEN of INFLUENCE.—Congenial and remunerative OCCUPATION offered to a Gentleman, to solicit Support for a Church Work of great importance.—Communications, in the first instance by letter, stating qualifications and reference, addressed KAPPA, care of Messrs. Macmillan & Co., 25, Bedford-street, Covent-garden, W.C.

A HIGH-CLASS LITERARY GENTLEMAN, Eight Years' experience as Editor, Special Correspondent, and Manager, desires an ENGAGEMENT in London. Good Leader-Writer, Critic, and Essayist.—Address R. A., care of Messrs. Post-offices.

PRESS.—GENTLEMAN of Twelve Years' Experience in all Departments of Newspaper Work, desires ENGAGEMENT as Manager to a Daily or Weekly Newspaper; Scotland preferred. Could undertake Management of a London Special Wire. First-class references.—B. A. 7, Messrs. Deacon's, 154, Leadenhall-street, E.C.

PRESS.—A GENTLEMAN of much experience, who has resigned the position of Assistant-Editor of a Leading Weekly, desires a RE-ENGAGEMENT as Editor, Sub-Editor, or Reporter. Popular Writer and Verbatim Reporter. Highest testimonials.—Address, stating Salary, Elmton, 9, Pelham-street, Brighton.

THE PRESS.—A Young Man, having some knowledge of Photography and well up in Composition, is REQUIRED as a JUNIOR ASSISTANT by Mr. WHEATLEY, Journalist, Wolverhampton. State age, experience, and Salary required.

THE PRESS.—Wanted, a RE-ENGAGEMENT as SUB-EDITOR. Would assist with the Reporting. Advertiser is fully qualified in either Department, and can furnish unexceptionable references.—Address CHRONICLE, care of May's Advertising Office, 160, Piccadilly.

THE PRESS.—Wanted, for a North County Conservative Weekly Newspaper, a VERBATIM REPORTER. Address, with full particulars, stating salary expected, Box 45, Post-office, Durham.

THE PRESS.—REPORTER or SUB-EDITOR.—RE-ENGAGEMENT wanted by the Advertiser, who has had many years' experience on both Daily and Weekly Papers, and is thoroughly conversant with Newspaper Work.—B. S., at C. H. May & Co.'s Advertising Offices, 75, Gracechurch-street, E.C.

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EDITOR.—A GENTLEMAN, who has for the last Six Years Edited a High-Class County Journal of Liberal Politics, desires a RE-ENGAGEMENT. Is a Verbatim Short-hand Writer, and thoroughly experienced in every Department of Journalism. Age 34. Highest references and testimonials.—Address 8, 125, High-street, Kingsland, E.

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NOTICE.—E. J. FRANCIS & CO., Printing Contractors, Wine Office-court, E.C., and Took's-court, E.C., are prepared to submit ESTIMATES and enter into CONTRACTS for LETTER-PRESS PRINTING and LITHOGRAPHY.

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UNIVERSITY COLLEGE, LONDON.

DEPARTMENT OF THE FINE ARTS.

Slade Professor, A. LEGRON, Esq.

The Classes for Drawing, Painting, and Sculpture will begin on OCTOBER 4, at 9.30 A.M.

Early application for admission to the Fine Art Schools should be made, as only a limited number of Students can be admitted, owing to the insufficiency of the accommodation to meet the demands made upon it.

The late Mr. Felix Slade, by his will, founded Six Scholarships, of 20l. per annum each, tenable for Three Years by Students of the College, for proficiency in Drawing, Painting, and Sculpture.

Two of these Scholarships may be awarded in 1877, the Competition for which will be limited to those who enter the Fine Art Classes before November 16 next, and whose age on June 3, 1877, will not be more than nineteen years. Ladies as well as gentlemen are eligible to Slade Scholarships.

Prospectuses, containing full information respecting Fees, Times of Class Meetings, the Regulations relating to the Slade Scholarships and Prizes, with other particulars, may be obtained on application at the College, Gower-street, W.C.

August, 1876. TALFOURD ELLY, M.A., Secretary to the Council.

UNIVERSITY of LONDON EXAMINATIONS.—MR. B. REYNOLDS, M.A. London, Cambridge

wrangler, PREPARES GENTLEMEN in the Mathematical and Physical Subjects for any of the above, and especially for the B.A. Examinations.—20, Hereford-road, Baywater, W.

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All inquiries should be addressed to L. Leberberg, Wiesbaden. References supplied, if desired. Terms moderate.

LECTURES to TEACHERS.—WOMEN'S EDU-

CATION UNION.—MR. PERCY HARDING will give a Course

of Six Lectures on the Method of Teaching Geometry, at the Rooms of the Society of Arts, John-street, Adelphi, on WEDNESDAY EVENINGS, at 8 P.M., beginning October 3.

MR. ANDRÉE will give Six Lectures "On the Paris-Paris-Chère Method of Teaching Music," beginning November 14th.—Fees for each Course: Teachers, 4s.; Non-Teachers, 2s. For the Two Courses: Teachers 7s.; Non-Teachers, 14s. LOUISA BROUGH, Secretary.

Office: 115, Brompton-road, S.W.

LADIES' EDUCATIONAL ASSOCIATION, in

connection with University College, London. The EVENING CLASSES will OPEN on MONDAY, October 9, the DAY CLASSES on MONDAY, October 21.—Prospectuses in the Office at the College, or of J. E. MYLNE, 27, Oxford-square, Hyde Park, W.

MISS MARY LEECH'S MORNING SCHOOL

for YOUNG LADIES will RE-OPEN OCTOBER 2nd, at 14, Radnor-place, Hyde Park, W.

THE MISSES A. & R. LEECH'S SCHOOL

(date Belgrave Cottage) for LITTLE BOYS will RE-OPEN October 2nd, at 65 and 66, Kensington Gardens-square, Hyde Park, W.

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for LADIES, 28, George's House, CAMBRIDGE.—Unusual amount of Teaching, Power, and Home Comforts. Everything concerning this School will bear close inquiry. Number of Boarders limited to 20.

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Visitor—THE LORD BISHOP OF LONDON.

The COLLEGE CLASSES will be open for the Michaelmas Term on THURSDAY, October 5. Classes in Greek, and Conversation in Modern Languages. Individual Instruction in Vocal and Instrumental Music. Boarders received by Miss Wood on the College premises. Two Scholarships, for Girls between Fourteen and Sixteen, and the Annual Scholarship, for Girls under Eighteen, will be open to competition. The EXAMINATION for Scholarships and for New Pupils will be held at 10 A.M. on OCTOBER 5. Prospectuses may be had on application to the Lady Resident, Miss G. H. PLUMPTRE, D.D., Principal.

QUEEN'S COLLEGE, 43 and 45, HARLEY-STREET, W. Higher Classes of Lectures for Adults will be given during the Michaelmas Term. Programmes will be issued in September. E. H. PLUMPTRE, D.D., Principal.

QUEEN'S COLLEGE SCHOOL, 43 and 45, HARLEY-STREET, W. FOR GIRLS UNDER FOURTEEN. Lady Superintendent—Miss HAY.

The CLASSES will be OPEN for the Michaelmas Term on THURSDAY, September 28. Prospectuses may be had on application to the Lady Resident, Miss G. H. PLUMPTRE, D.D., Principal.

ROYAL COLLEGE OF SCIENCE FOR IRELAND, STEPHEN'S GREEN, DUBLIN. SCIENTIFIC AND TECHNICAL EDUCATION.

This College supplies a complete Course of Instruction in Science, applicable to the Industrial Arts, especially those which may be classed broadly under the Heads of Chemical Manufactures, Mining, Engineering, and Agriculture. A Diploma of Associate of the College is granted at the end of the Three Years' Course. There are Four Royal Scholarships of the value of £50 each yearly, with Free Education, including Laboratory Instruction, tenable for Two Years. Two become vacant each year. They are given to Students who have been a Year in the College. The Fees are £2 for each Course, or £10 for all the Courses of each Year, with the exception of Laboratory Practice.

Chemistry (Theoretical and Practical), Metallurgy, &c.—Professor Galloway, F.R.S. Mathematics, Mechanics, and Mechanism—Professor Hennessy, F.R.S. Descriptive Geometry, Drawing, Engineering, and Surveying—Professor Frost, C.E. M.R.I.A. Experimental Physics (Theoretical and Practical)—Professor Barrett, F.R.S. F.C.S. Mining and Mineralogy—Professor O'Reilly, C.E. M.R.I.A. Agriculture—Professor Davy, M.D. M.R.I.A. Botany—Professor W. Webb, M.D. Zoology—Professor Leith Adams, M.B. F.R.S. Geology—Professor Hall, M.A. F.R.S. Paleontology—Mr. R. F. G. The Chemical and Physical Laboratories are Open Daily for Practical Instruction. The Session commences on MONDAY, October 2nd. Programmes may be obtained on application to the SECRETARY, Royal College of Science, Stephen's Green, Dublin. FREDERICK J. SIDNEY, LL.D., Secretary.

BEDFORD COLLEGE (for Ladies), 8 and 9, York-place, Portman-square (late of 45 and 49, Bedford-square). Founded 1862. Incorporated 1869. The Session 1876-77 will begin on THURSDAY, October 19th. GREEN CLASSES will be formed under R. S. BARNARD, M.A., Fellow of St. John's College, Cambridge.

ROYAL POLYTECHNIC COLLEGE.—TEACHERS WANTED for the following subjects:—Drawing, Building Construction, Acoustics, Light and Heat, Physiography, Arithmetic, Mathematics, English Grammar, and Composition. Applications to be sent, on or before the 30th of September, to the Secretary, Mr. James O'Connell, 309, Regent-street.

SCHOLARSHIPS IN SCIENCE.—ST. BARTHOLOMEW'S HOSPITAL AND COLLEGE.—A SCHOLARSHIP of 100l. open to Students who have not entered at any Metropolitan Medical School, will be offered for COMPETITION on SEPTEMBER 27. Subjects:—Botany, Zoology, Physics, and Chemistry. An Exhibition of 50l. in the same Subjects, and One of 40l. in the Subjects of Preliminary Education, open to students who have entered at the Hospital in October, will be competitive for October 1st. For particulars apply personally or by letter, to the Warden of the College, St. Bartholomew's Hospital, Southwark, E.C.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, 1, Peckham, W.—OPEN SCHOLARSHIPS AND EXHIBITIONS IN NATURAL SCIENCE.—The Examination for 1876 will be held on TUESDAY, October 3rd, and following Days. Candidates are requested to call upon the Dean, at 49, Regent-street, Portman-square, on the morning of MONDAY, October 2nd, between the hours of 10 and 11, and to bring with them the necessary certificates. For further particulars apply to the Registrar, at the Hospital, or to A. B. SHEPHERD, M.B., Dean of the School.

ST. THOMAS'S HOSPITAL, ALBERT EMBANKMENT, WESTMINSTER BRIDGE, S.E.

The MEDICAL SESSION for 1876 and 1877 will commence on MONDAY the 2nd of October, 1876, on which occasion an ADDRESS will be delivered by Mr. FRANCIS MAWSON, at Four o'clock. Gentlemen are informed that the Admission Fees to Practice and to all the Lectures may be paid in one of two ways:—1st. One Hundred Guinea, paid on entrance, entitle a Student to unlimited attendance. 2nd. Payment by three instalments, namely, of 40l. at the beginning of the first year, 40l. at the beginning of the second year, and 30l. at the beginning of the third year, entitles a Student, after payment of the third instalment, to unlimited attendance. Special Exhibits may be made to any Course of Lectures, or to the Hospital Practice; and a modified Scale of Fees is arranged for Students entering at the Second, Third, or any subsequent year. Any further information required will be afforded by Mr. WHITFIELD.

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NOTICE.—BAGSTER'S CATALOGUE. MESSRS. BAGSTER'S CATALOGUE. Illustrated with Specimen Pages. By post, free. SAMUEL BAGSTER & SONS, 15, Paternoster-row.

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MIDLAND RAILWAY.—TOURIST ARRANGEMENTS, 1876.—FIRST AND THIRD CLASS TOURIST TICKETS, available for Two Months, will be issued from JUNE 1st to the 31st of OCTOBER, 1876. For particulars, see Time-Tables and Programmes, issued by the Company. JAMES ALLPORT, General Manager, Derby, May, 1876.

Sales by Auction

MESSRS. HODGSON beg to announce that their AUTUMN SEASON will commence on SEPTEMBER 27th, with the Sale of a large COLLECTION of MISCELLANEOUS and MODERN BOOKS and STATIONERY, including the well-selected Stock of Mr. J. HOWELL, of Rochester-row, Westminster; to be followed by several important SALES, Catalogues of which are now in course of preparation. Samples and full Particulars of Stock for insertion in any of the above Sales should be forwarded as early as possible. 115, Chancery-lane, W.C., September 23, 1876.

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MACMILLAN'S MAGAZINE, No. 204, for OCTOBER. Price 1s.

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SATURDAY, SEPTEMBER 23, 1876.

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LITERATURE

*Turkistan. Notes of a Journey in Russian
Turkistan, Khokand, Bukhara, and Kuldja.*
By Eugene Schuyler. 2 vols. (Sampson
Low & Co.)

THERE have been few subjects on which more ink has been spilt than on the question of Russia v. England in Central Asia. We have had description after description of Afghanistan and Persia, and of the sentiments of the rulers of those countries. A few adventurous travellers have reached the Central Asian Khanates and published their experiences, and numberless writers who have never passed Suez have aired their theories as to what the political meaning of those accounts really was. But all this time, except to the small minority of Englishmen who know Russian, Russian Turkistan remained a sealed book. But for an occasional telegram, generally retranslated from a German newspaper, the Russian movements would have been unrecorded in England. As it was, nine out of ten were never heard of, and at the news of the tenth a general panic seized the press and the public, after which quiet would again follow for a year or so. The stringent rules adopted by the Russians for keeping Europeans out of Turkistan succeeded much better than such enactments ordinarily do, partly because of the distance and the fatigue of such a journey, partly because the breadth of the steppe rendered it impossible for travellers to pass, except by well-guarded roads, and partly, perhaps, because the existence of the prohibition was unknown except to a few in England—the Russians themselves frequently denying it—and therefore the spice of adventure was not sufficient to tempt travellers on. In 1873, from various causes, several foreigners succeeded in reaching Central Asia from the north. Mr. MacGahan published a book, which however only dealt with the Khivan expedition, and Mr. Ker one which described the social side of the country to a certain extent, but left politics almost untouched. It was reserved for Mr. Schuyler to bring out the first full account in English of what the Russians have done in Central Asia, and of their present position. Mr. Schuyler, being an American, travelled with the full permission of the authorities; but they might, perhaps, had they known the completeness of the exposure which was impending, have reconsidered their law, which names Europeans, means Englishmen, and yet excludes

forty millions who speak the English language.

Mr. Schuyler went by the ordinary Orenburg route as far as Tashkent, where, of course, he had his chief opportunity of seeing how things were going on, and what the Russian system and prospects really were. He has very wisely not described his journey in strict sequence, but has devoted the first volume entirely to Russian Turkistan, the habits of the natives, and their social relations with the Russians; while the second volume treats of the Khanates, the return journey to Siberia, including Kuldja, and the political position of Central Asia generally. The author is of opinion that the relations between the natives and their conquerors are not nearly so kindly as they were at first. Tcherniaief, a clever administrator as well as a brave soldier, left the natives alone as much as possible, which was exactly what was needed; but when Kaufmann's reign began, the natives were "tormented," to use their own phrase, though with the most benevolent intentions, and expenses rose every year. The tyranny of the native rulers, which made the Russians welcome, is now forgotten, Islam occasionally wrings the consciences of the faithful dwelling under infidel rule, taxes are increasing, the interpreters are all ignorant and corrupt, and the class of officers sent to Turkistan is rapidly degenerating. The atmosphere of Tashkent is hardly calculated to inspire those living in it with any great degree of self-respect. The following quotation discloses an amusing but pitiful state of things:—

"Out of mere curiosity, perhaps, I regret not having seen the life of the little court—for it is really nothing else—that ordinarily goes on at Tashkent. The Governor-General or Yarim Padshah (the half-king), as he is called, imitates in the state he keeps the Eastern monarchs by whom he is surrounded. He never rides out, so I am told, without a select guard of Cossacks, and even his wife and children had their escorts. These I believe were abolished after the unfortunate remark of some newly-arrived officer, who innocently inquired what lady that was under arrest. The Governor-General rarely goes out in society, but does his part by giving two or three balls during the course of the winter, to which the leading natives as well as the Russians are invited. These must be very amusing affairs. The guests are obliged to arrive punctually at the moment, as at the Winter Palace at St. Petersburg, and they are kept waiting for perhaps an hour until the Governor-General, his wife, and suite enter the room, and are received by deep bows and curtsies. Before this it is impossible for dancing to begin, and even then etiquette is so much stricter than at St. Petersburg, that no gentleman is allowed to sit down in the presence of the Governor-General. The poor unfortunate who should do so would at once receive from an aide-de-camp a strong hint to rise. Should the Governor-General be seen shaking a person warmly by the hand or conversing with him for five or ten minutes, the man so honoured immediately becomes a figure in society, and is considered necessarily a rising man and one of great influence. Such is the effect of court favour. When the Governor-General returns to Tashkent triumphal arches are erected, all the officials go several miles out of the city to meet him, and he is received with salutes of cannon. When a branch of the Control Department was founded at Tashkent, it was found that there was no law authorizing these salutes, and a request was made that the money expended for the powder fired should be returned to the Treasury. The money was paid, but the salutes continue, though not at

Government cost. The triumphal arches and the receptions are supposed to be the outspoken expression of popular feeling, but these demonstrations are hardly spontaneous."

Mr. Schuyler's description of the life of the natives is excellent; not a point is omitted; in fact, it shows how thoroughly he must have imbued himself with the spirit of the country, and how conscientiously he must have worked for himself, through the great heat, to see things with his own eyes.

In Khokand and Bukhara, Mr. Schuyler, of course, had more difficulty in obtaining information, the natives suspecting him as a spy, and throwing hindrances in his way; in fact, we wonder that he penetrated so far into Khokand as he succeeded in doing. His chief political impression is curious, but we believe thoroughly true; it is that the Khanates were in no way under Russian influence. This will be rank blasphemy to the tribe of Anglo-Indian Russophobists, but it is none the less certain that the natives, till they are actually conquered, will never believe that Russia has the power, but not the will, to do it. Khokand has since fallen, but there can be little doubt that in Bukhara the Sarts are still, as always, under the impression that they have but to bestir themselves in order that not a Russian should be left in Central Asia.

We are treated to some most amusing scraps of news in places, but the gems have to be searched for. How the expedition which eventually took Khokand was really intended for Kashgar, and how Khiva was being taken by storm at one end while a triumphal entry was being made at the other, is told with a good deal of dry humour. The chapter on Kuldja is one of the best and most interesting in the work, as the country itself is, perhaps, the most interesting in Central Asia, not even excluding the lovely valley of the Zarafshan.

The result of Mr. Schuyler's impressions on the Russian administration and foreign policy is summarized in two chapters, into which we cannot attempt to follow him. Briefly he considers the Russian rule in a precarious state, not that there is much danger to be apprehended from a rising, but because of the general discontent which undoubtedly exists; that Turkistan is a great burden, and one likely to become heavier, as production is strictly limited by the amount of water, and as a menace to India it is of far less value than is commonly believed, from the inherent feebleness of the Russian position itself, and the immense distance from any support. He maintains, what ought to be acknowledged by all impartial men, that Russia has no settled policy of advance in Central Asia. Her advances have been made hitherto by fits and starts, according to the caprices of commanders and the necessities of the moment, and have generally been made in the face of direct orders from above, which orders we cannot but believe were produced by a genuine dislike of the policy of annexation.

"As matters now stand there are five distinct rulers over large provinces in Asia, all of whom have differing interests, and some of whom are in constant rivalry, if not in actual bad relations with each other. All are nominally dependent in military matters upon the Minister of War; all are practically independent of the Foreign Office; all have the right of reporting personally and *vis à vis* to the Emperor, and really acknowledge no other authority. These are the Grand Duke

Michael, the brother of the Emperor, and the Lieutenant of the Caucasus, and the Governors-General of Orenburg, of Turkistan, of Eastern and of Western Siberia. The Governors-General of Turkistan, of Eastern and of Western Siberia, on account of the affairs of Kuldja, have to do with Chinese officials, and in spite of telegraphs and post-roads each of them pursues a policy which at times differs from that of each of the others, as well as from that of the Russian Minister at Peking, who acts under the direct instructions of the Foreign Office. The Governors-General of Western Siberia, of Turkistan, and of Orenburg have different methods for the government of the Kirgh'z, who are nearly equally divided between the three provinces. General Kryzhanofsky and General Kaufmann, as is well known, look at the affairs of the Steppe and of the Central Asiatic Khanates from entirely different and almost irreconcilable points of view. The Grand Duke Michael, to whom the Trans-Caspian district has lately been subjected, has still different ideas, and in his anxiety to find some occupation for the large army placed under his orders frequently makes propositions to the Ministry of War, which, on account of foreign complications that would arise, are as often rejected by the Emperor on the advice of Prince Gortchakof; and yet almost without exception they are merely adjourned and not utterly forbidden, for we see that the Grand Duke is sometimes allowed to carry out his plans on a smaller scale than he at first intended, as well as to take steps for larger projects, and we know the great influence which both the Grand Duke and the Minister of War have with the Emperor."

The language in which the book is written is terse, but seldom dull; Mr. Schuyler has judiciously interspersed his heavier matter among the narrative in such way as to avoid the heaviness which was more or less certain to attend descriptions of the changes in the internal politics of Central Asia. There is, however, a tendency to slipshod English in places; for instance, in Vol. I. p. 217, he says:—"The trade with Russia is principally carried on by the roads from Vierny, Tokmak, and Naryn to Kashgar, though there is some trade also by the routes of Aksu and Karakol, and through Khokand." This would imply, to a reader who did not know particulars, that there were separate roads from the places first named to Kashgar. In fact, there is only one, from Vierny (or Tashkent) through Tokmak and Naryn, to Kashgar. The Aksu route means, we presume, the Musart pass, which ends near Aksu; this is hardly, if ever, practicable for caravans, and we know of no road from Karakol to Kashgar except the afore-mentioned one through Naryn. In one place, Mr. Schuyler says that the population of Khokand is probably under a million; in another, he says the Russian estimate of 960,000 is far too large, and puts it at 600,000, which is certainly under a million, but then so is the Russian estimate. The engraving, too, called "Dungan women" should surely be "Tarantchi women," but this is probably a slip. The maps are admirable; that of Kuldja is the only real one yet published in England, and is, we believe, faultless; it, however, hardly distinguishes between low ranges of hills and the really great mountain-chains. The engravings, too, partly drawn from Verestchagin's pictures, are excellent, but the work is rather disfigured by a number of unfortunate printers' errors, the difficult names, curiously enough, being spelt without error, while common words are wrong. A bad error (11½d. for 2½d.) makes some calculations in Vol. II. p. 152, perfectly worthless. These trifles, however, which we only point

out with a view to correction, in no way detract from the value of this most accurate and interesting book, which will long remain the standard English work on Central Asia.

The English Bible: an External and Critical History of the Various English Translations of Scripture, with Remarks on the Need of Revising the English New Testament. By John Eadie, D.D. 2 vols. (Macmillan & Co.)

Old Bibles; or, an Account of the Various Versions of the English Bible. By J. R. Dore. (Pickering.)

THE late Dr. Eadie evidently bestowed considerable pains on the compilation of his work on 'The English Bible,' without, however, adding much to what was already known by well-read students in this direction. It is a big book upon an important subject, and is no doubt well calculated to instruct persons ignorant as to how we came into the possession of our present authorized version of the Holy Scriptures.

The late Christopher Anderson was the first, in his 'Annals of the English Bible,' who did substantial justice to the subject. He especially called attention to the character and labours of William Tyndale; and his work, notwithstanding some inaccuracies and its heavy, lumbering style, still continues to be the store-house from which later writers have drawn most of their information. The zealous labours of Mr. Francis Fry, to which this journal has often directed attention, have contributed largely to our knowledge, and show how a careful study of bibliography may be made efficacious in historical research. While mentioning these books we must not forget the work of Canon Westcott, nor the 'Life of Tyndale,' by the late Rev. R. Demaus. Upon each of these writers Dr. Eadie has largely drawn. He has also shown some independent research; but his work is dull and heavy as a composition, and the two volumes, consisting at present of about a thousand pages, might have been advantageously compressed into one. Dr. Eadie's remarks, however, "on the need of revising the English New Testament," are entitled to consideration. He appears to have studied the matter with the deepest attention. All the time that could be spared from his ministerial functions was devoted to this important work, to the shortening, it is to be feared, of his days. Being also of the "Evangelical" school, as it is called, the very fact of his working harmoniously with persons of a different way of thinking may tend to convert many of the party to which he belonged from the pernicious error of supposing that there is any danger to religion in correcting the Authorized Version conformably to modern criticism and scholarship.

Of independent versions of the Scriptures made by unauthorized revisers Dr. Eadie gives some curious specimens. Thus, in the year 1729, a person named Mace published a translation of the New Testament, from which we take the following passages:—Matthew vi. 16, "When ye fast, don't put on a dismal air, as the hypocrites do"; xi. 17, "If we play a merry tune, you are not for dancing; if we act a mournful part, you are not in the humour"; xii. 34, "Tis the overflowing of

the heart that the mouth dischargeth"; xx. 31, "The people reprimanded them to make them hold their tongue, but they bawled out the more"; xxii. 34, "The Pharisees hearing that he dumbfounded the Sadducees"; 1 Cor. vii. 36, "If any man thinks it would be a reflection upon his manhood to be a stale batchelor"; James ii. 3, "If you should respectfully say to the suit of fine clothes, Sit you there; that's for quality."

Similarly, at a distance of about a hundred years, i. e. in 1833, there was published at Boston, U.S., a version by one Rudolphus Dickinson, from which we extract the following:—

Luke ii.: "And it happened, that when Elizabeth heard the salutation of Mary, the embryo was joyfully agitated, and Elizabeth was pervaded by the Holy Spirit; and she exclaimed with a loud voice, and said, Blessed are you among women! and blessed is your incipient offspring! And whence is this occurrence to me, that the mother of my Lord should visit me? For, behold, when the voice of your salutation sounded in my ears, the embryo was enlivened with joy."

Acts i.: "Moreover, this man, indeed, caused a field to be purchased with the recompense of his iniquity; and, falling prostrate, a violent internal spasm ensued, and all his viscera were emitted."

There was also a Baptist translation of the Bible, published by the "American Bible Union," of which Dr. Eadie says, that—

"It merits commendation in many respects though it is more than faithful to antipedobaptist opinions. It professedly makes the Bible the book of a sect. And we have such renderings as these:—Matth. iii. 1, 'John the Immerser'; xxi. 5, 'John's immersion, whence was it, from heaven or from men?' Acts xix. 3, 'Unto what were we immersed? And they said, Unto John's immersion. John indeed immersed with the immersion of repentance.' Rom. vi. 4, 'Buried with him by the immersion into his death.'"

From such vulgarity and sectarianism the revised version now in progress, whatever else may be its faults in other respects, is sure to be free.

After a work like this, by Dr. Eadie, it may appear a pity to mention such a production as that of Mr. J. R. Dore (whoever he may be) on 'Old Bibles,' and it is astonishing that a publisher of Mr. Pickering's eminence should lend his name to the dissemination of such trash, especially seeing that his father was the publisher of Christopher Anderson's 'Annals of the English Bible,'—a treatise which, as we have said above, is a standard authority. There was an opportunity, just now, for one skilled in the subject to write a small book about "Old Bibles" that might be acceptable to the public; but the volume before us has nothing to recommend it, except its title. Although it consists of little more than a hundred pages, it is impossible almost to conceive what a large amount of prejudice and ignorance is contained within its covers. Thus, of the followers of Wycliffe, he says:—

"It is much to be regretted that they adopted opinions and practices totally subversive of morality and good order, and thereby, like the Anabaptists of a later date, enlisted against themselves all religious and conservative men, and brought disgrace even on that modicum of truth they held combined with their gross errors. The Lollards at last proceeded to such extremes that in the interest of society generally it became necessary to check them, or universal confusion would have ensued, lawless force overcome the principles of equity, and social intercourse could have no longer existed."

What a perversion of truth is here! Whoever has read the history of the period must know well that the "lawless force" spoken of by the writer was brought into action, not by, but against the Lollards.

Again, when Tyndale's translation of the New Testament was published, although it was burnt by Tunstal, and its author persecuted to death by Sir Thomas More,—More and the Bishops are represented by Mr. Dore as being "most anxious that there should be a correctly translated and properly authorized vernacular Bible for the use of the people of England."

Again, the writer's antipathy to both Cranmer and Cromwell is most marked, while Bonner is spoken of with the highest praise. Cranmer is represented as having been an accessory to Tyndale's death, and as one "who, not satisfied with having been a party to the death of Tyndale, vented his spite against the translation of Tyndale, even after the translator's body had been burnt." This is not true. Whatever may have been Cranmer's faults, there is no evidence whatever that he was a consenting party to the martyrdom of Tyndale.

Of the ignorance displayed by the author of this little volume the following are a few proofs. He speaks of "Metz," meaning Mentz, as the cradle of printing. This occurs twice over. On p. 14 he prints the name of Peter Schöffer, second son of Peter Schöffer, of Mentz, as Peter "Scöffer"; and, at p. 17, he says, speaking of an edition of Tyndale's "New Testament," printed in 1534, "A copy of this edition was presented by Tyndale to the wife of Henry the Eighth, who at one time exercised such a wonderful influence over Henry's conduct. This Testament was printed on vellum, and beautifully illuminated, with Anne Boleyn's name distributed over the edges; 'Anne' in red letters on the top, 'Regina' on the front, and 'Anglice' on the under part." The words are really, "Anna Regina Angliæ." Similarly he distorts the "Wydowe of Christoffel of Endhouē," printer of an edition of the New Testament in 1534, into "Wydowe of Christoffel of Endonē." Finally, as a specimen of the writer's knowledge of Latin, let us mention that, in his description of the Bishops' Bible of 1568, he says that it was printed by R. Jugge "cum privilegio regia majestates," instead of "Cum privilegio Regiæ Maiestatis," as the words stand plainly in the original.

Life in the Southern Isles; or, Scenes and Incidents in the South Pacific and New Guinea. By the Rev. William Wyatt Gill, B.A. (Religious Tract Society.)

THE author of this work spent more than twenty years as a missionary in the Pacific, and it is only needful to quote his collection of the myths and songs of that region to show that he is a man of cultivated tastes and extended sympathies. The present volume is a collection of notes and reflections on the various topics which have most attracted his attention. When a man writes from exceptional knowledge of his subject, it is well not to be too critical about the form into which he throws it. We may regret that, writing apparently *virginibus puerisque*, he abstains from entering upon various grave questions on which the observations of such a man would

be of value. We may regret, too, the occasional introduction of passages acceptable only to a limited class of readers. It is possible that, in the Pacific, the crime of Sabbath-breaking is visited with Divine vengeance, immediate and palpable, but it would lower our conception of Divine justice to believe that it could be so visited on a "heathen." At p. 214 we read of certain islanders being persuaded to give up *infanticide and embalm- ing of the dead*. Mr. Gill is surely above the confusion, not unknown in missionary ethics, which would place two such practices on the same moral level! Blemishes of this sort, however, are rare and accidental in a volume which contains, along with much miscellaneous information, many curious passages on history, traditions, and customs, affording valuable illustrations of native character and modes of thought. These are the more curious from the period being one of transition. Many now living an orderly existence have passed through the abominations of the old régime, and to the mass of the people, not to mention the members of tribes who formerly supplied the victims for human sacrifice, the term "Christian liberty" must be full of significance. Mr. Gill says, and it is quite credible, that the change has, within his own experience, resulted in a great moral and material advance. He quotes some interesting and impartial evidence in proof of this; but a far greater effect might have been produced if the agencies employed had been everywhere wisely directed. Even writers who are favourably disposed to missions declare that in many places the natives are driven to emigrate, or are actually pining away from sheer dulness, the result of an unnatural system of training, where the instruction is exclusively religious, and quite dissociated from the practical business of life. Although there is too much truth in this picture, there is fortunately another side to it. In many of the better administered islands the population has ceased to diminish, and in some it is even increasing. A more serious and palpable cause of their decline, viz., the conduct of vagrant Europeans in the more remote islands, will soon, we understand, be checked by the appointment of a High Commissioner for the Pacific, whose jurisdiction is to extend over British subjects in all the islands not under the dominion of any civilized State.

In combating Mr. Wallace's theory "that the Polynesians are descended from a race which once overspread a great submerged southern continent," Mr. Gill appears somewhat to misapprehend the argument. He says (p. 21) that, even "supposing a remnant to have escaped, it is scarcely possible that life could be sustained, as usually there is nothing to eat on these lofty mountains, to say nothing of the difficulty of obtaining water." Mr. Wallace hardly imagined such a rapid subsidence as this implies! The "remnant" had many thousands of years, probably, wherein to "escape," while the bare lofty mountain-tops were sinking into forest-clad, well-watered hills. But we agree with Mr. Gill that all the traditions of the origin of the people point to the north-west, and, what is perhaps more to the purpose, many of their customs, and even important details of their social organization, indicate an Asiatic source. This view is strengthened if we accept,

with Mr. Gill, the relationship of the brown Polynesian to the Malay race, a connexion which, we venture to think, Mr. Wallace has failed to disprove. Mr. Gill considers the black Papuan race which, geographically, separates the Malay from the brown Polynesian to be an entirely different race from the latter. This view is held by nearly all who have had a practical acquaintance with both races, but it is perhaps doubtful whether further investigation will not render it impossible to maintain this sharp distinction. To the ordinary observer the difference is striking enough. The life of a missionary among the friendly, courteous, and comparatively decent Polynesians, is very different to that of one among the brutal and savage Papuans. The latter position is one of considerable danger, and the practice of sending among them, as pioneers, trained Polynesian teachers, who to these savages are quite as much foreigners as the English themselves, seems open to question on the score of humanity. These Papuans, however, have their merits. Although less civilized, they seem to be a heartier and more vigorous race than the Polynesian. It is possible that, along with other points of resemblance to the Negro races of Africa, they have some of that toughness of constitution which saves these from extinction when in contact with Europeans. If so, they may have a more assured future before them than the gentler Polynesians, whom, besides, they greatly outnumber. Dr. Meinicke, in his comprehensive work on the Pacific (*Die Inseln des Stillen Oceans*), estimates the Polynesians (including Fiji) at less than half a million, and the Papuans at two and a half millions. His estimate of the population of New Guinea at one million is probably much below the mark. Mr. Gill is one of the very few Englishmen who have visited New Guinea, and his observations on the country and the people, some of which attracted notice when read before the Geographical Society, have much value and interest now that attention is centred on that country. His stories of natural history contain, especially for the juvenile reader, much that is new and attractive. In describing the mound-building birds, he says that "the *Megapodius tumulus* . . . is often called the Jungle Fowl." The term is somewhat misleading, for the birds known throughout India by that name are certainly not megapodes, or mound-builders. We do not know whether he vouches for his story of the serpents, more subtle even than other members of their race, who, coiling themselves up on the approach of rain, collect the water in the coil, and thus entrap unwary birds who come to drink it! The value of the book is enhanced by a number of useful illustrations, not only of the scenery and natural productions of the islands, but of the utensils and ornaments, manners and customs of the people for whose benefit Mr. Gill has worked so long, and to whom he is now returning.

The Visitation of Yorkshire, made in the Years 1584-5, by Robert Glover, Somerset Herald; to which is added the Visitation, made in 1612, by Richard Saint George, Norroy King-of-Arms. Edited by Joseph Foster. (Privately printed.)

It is no easy matter to review a closely printed octavo of 650 pages devoted entirely to the

dry details of genealogy. To read such a book is a labour not lightly to be undertaken by any one but an enthusiastic student of pedigrees. Yet it is well such books should be printed, and highly needful that persons interested in historical or topographical pursuits should be masters of their contents. The contempt with which genealogy and the sister study of heraldry were formerly treated by many foolish and a few wise people may easily be accounted for, and, like most other rash judgments, there is a good deal to be said in its favour. The patience of sensible and honest men has been tried almost past bearing for this last 200 years by the false and pernicious fables which professional genealogists have been in the habit of inventing for those who paid them. The stream of local history has been literally choked by their noxious garbage. It is not a little matter that our parochial and manorial history should have been distorted almost past hope of readjustment by these silly frauds, but the evil has not ended there. It would not be a difficult matter to point out instances in which our appreciation of national events has been influenced by this uncultured form of vanity.

Because spurious pedigrees are historically noxious, and also foster a peculiarly unpleasant sort of pride, we ought to be thankful to any one who will give us genuine evidence by which the claims of impostors may be tested. It is, or ought to be, a truism to say that pedigree lore is a needful possession for an historian, whether he be writing the annals of Little Pedlington or of the British Empire. Our elder historians were conscious of this, and their books are for the most part accurate, according to the lights they had. With the change of political and religious thought in the eighteenth century came, as was natural, a change of view with regard to genealogy. Gibbon, perhaps alone of the greater historians of this more modern era, has shown that, without undervaluing higher things, there was a place which these minute details ought to fill. The passage which he has devoted to the house of Courtenay is at once the admiration and envy of those who take delight in such details; almost every page, however, of 'The Decline and Fall' evinces that he had the family histories of the persons of whom he treated at his finger's end. While few of his followers have had grasp of mind sufficient to take in at once so much of the life and movement of the time, hardly any have been willing to inflict on themselves the drudgery required to learn how the family relationships of the men of whom they discoursed affected public conduct. No one can understand the various and ever-shifting scenes of the English, and still more of the Scottish, Reformation, without a knowledge of how family alliances affected principles and conduct. Ignorance of pedigrees and family history is still more fatal to those who would attain to anything beyond the most superficial acquaintance with the great Civil War. Then, more than at any previous or subsequent time, family alliances affected character and political partisanship. If ever a really exhaustive history of that wonderful time is to be written, it must be by one who has mastered the complex family relationships of the principal actors. To take the first instance that comes to hand—and hundreds might be

given—the reason why the greater part of North Lincolnshire, including the southern bank of the Humber and the river Trent, was from the first strictly Parliamentary, was undoubtedly the influence exercised by Edmund Sheffield, Earl of Mulgrave, whose extensive estates in the Isle of Axholme and about Normanby, on the eastern side of the Trent, made him by far the most powerful nobleman in those parts. He does not seem to have been by any means a man of strong Puritan leanings; but his daughter Mary was the wife of Ferdinand, Lord Fairfax, the Parliamentary commander in Yorkshire, and the mother of Sir Thomas Fairfax (the third lord), the hero of Marston Moor and Naseby. Had it not been for this match, it is probable the Parliament might not have possessed the key of the Trent and the command of the Isle of Axholme.

Want of acquaintance with such like parish register trivialities sometimes leads writers into strange mishaps. For instance, Mr. Yonge, in his 'History of the British Navy,' tells us that Col. Rainsborough, the officer who commanded the fleet in the Channel, which in 1648 mutinied and revolted to the king, "had no knowledge whatever of the sea" (i. 54); the facts being that he had been brought up to the sea from childhood. His grandfather was Thomas Rainsborough, "mariner," of East Greenwich, and his father Capt. William Rainsborough, who was General of the South Squadron of the fleet which was sent in 1637 against the Salee pirates.

The two Yorkshire Heralds' Visitation books, which Mr. Foster has printed, are valuable contributions to our knowledge of the family history of the largest of the English shires. For almost every purpose the volume he has given us is as good as the manuscripts themselves. It is not every one who can spare either the time or the money to visit the British Museum every time he wishes to verify a link in a pedigree. It has been the fashion of late for even antiquaries to sneer at documents of this class. At one time they were thought almost infallible, now that their statements have been tested by the information furnished by wills, and the "Inquisitiones post mortem," and have been proved in many cases to be incorrect, there has been a tendency to treat every statement found therein as open to grave question. This is, however, an absurd error, which a little consideration as to the manner in which the lists were put together will go far to rectify. The heralds or their deputies from time to time made visitations of the various counties, and, having summoned the gentry of the neighbourhood before them, took evidence as to family descent, and entered the same in their books. For the older pedigrees they required the evidence of wills or charters, for the last three stages of the pedigree they were content with verbal testimony only. It is obvious, as far as the older pedigrees are concerned, that they had not time or opportunity to make the long and laborious searches that accuracy requires. Stopping for a day or two in some inn parlour at Leeds, Ripon, Wakefield, or Thirsk, far away from documents by which evidence could be tested, and suffering constant interruption from fresh callers, it was not possible that the heralds should avoid

mistakes, or always weigh with exact justice what evidence was, and what was not admissible. We believe there is little conscious fiction in the older parts of the genealogies. The forgeries, when they were made, were not inserted there, but set forth in all the glory of heraldic emblazonment on long rolls, which were carefully put away among the family monuments, or hung up in the hall for guests and retainers to feast their eyes upon. The sort of errors we do come upon are of a much more harmless cast. A generation is sometimes dropped out, and occasionally a nephew is entered as a son. More often we find confusion among the wives. When two or three generations of men have been burdened with the same Christian name, it is not uncommon to find that the heralds have shuffled the wives among them in the most alarming disorder. With regard to the latter generations, to which the heads of the family testified from personal knowledge, there are few errors except those of omission. Younger sons and daughters are often left out as unworthy of notice, and sometimes the Christian name of the wife of a great-uncle or a nephew is given wrongly. Except for errors such as these the lists may usually be relied upon pretty confidently. Imperfect and inaccurate as heralds' visitations confessedly are, they form a body of evidence which is invaluable for furnishing hints of family connexion and relationship, and suggesting where and in what manner to seek for confirmatory evidence. Were it not for the information they give, we should often be unable to connect branches of a family which have settled far away from the paternal homestead. It cannot, however, be too often enforced on the attention of all interested in such matters, that the only proof of a pedigree is such evidence as would be received in a court of law, and that these heralds' note-books are only valuable as recording the expressed conviction of the head of the family. That the heralds used considerable caution is proved by the occurrence pretty frequently of notes of doubt or censure, such as "non probavit arma," or "Ignobilis, licet per cartas ficticias genus suum a nobilibus derivare (*sic*) conaret."

The earlier of the two heralds' visitations here printed, contains, as a kind of appendix, a number of monumental inscriptions copied from the originals in the Yorkshire churches, in 1584-5. These will be of much interest to Yorkshire antiquaries, as the greater part of the originals are destroyed, and of the few that remain, some are so worn by the feet of succeeding generations, that they are now illegible.

When the Surtees Society printed Dugdale's 'Yorkshire Visitation' of 1665-6, no index of persons was given, but only a list of the pedigrees, consequently the book remained useless for all purposes of minute research, until a self-denying Yorkshireman repaired the blunder by issuing one at his own risk. Mr. Foster has been careful to avoid this fatal error; his index consists of eighty pages of compact type. As far as we have tested it, it is singularly free from error.

There is one point in which there cannot be much doubt that the editor has made a mistake. Though he has retained the old and irregular spelling of the names of persons, he has altered it as far as places are concerned.

This should certainly not have been done. We have no doubt the editor has done his work carefully, but in this case he has ventured on an undertaking so hazardous, that it cannot possibly be but that he has made mistakes. The old spelling is certainly very bad, and severely tries the patience of copyist and reader, but there are instances in which no man, who has not an almost impossible amount of local knowledge, can tell what the right reading is. To make a guess, be it ever so clever, and well supported by probabilities, is improper, and may lead to endless confusion.

Several pages in the earlier part of the volume are taken up with extracts from 'Domesday Book,' made by the heralds at the time of the visitation. These were needful then, as 'Domesday' was not printed. Now that it has been published more than once, and may be seen in any good library, it is a pity that valuable space has been occupied by this fragmentary reprint.

NOVELS OF THE WEEK.

Major Vandermere. By the Author of 'Ursula's Love Story.' 3 vols. (Hurst & Blackett.)

Madeleine. By the Vicomtesse Solange de Kerkadec. 2 vols. (Sampson Low & Co.)

The Capel Girls. By Edward Garrett. 2 vols. (Tinsley Brothers.)

Success; and How He Won It. From the German of E. Werner. By Christina Tyrrell. 3 vols. (Bentley & Son.)

L'Idole. Par Paul Perret. (Paris, Didier et Cie.)

Le Piano de Jeanne. Par Francisque Sarcey. (Paris, Calmann Lévy.)

Souvenirs d'un ancien Chef de Chantier. Par Erckmann-Chatrian. (Paris, Hetzel.)

We do not know what it is that makes 'Major Vandermere' such remarkably hard reading; but so we certainly found it. Nor can we honestly say that we were repaid for our pains, for at the end of the book we really had little idea what it was all about. There are an immense number of people, who all talk a great deal to each other, which, no doubt, is to some extent the cause of the obscurity on which we have remarked; and they are mostly, as far as we can make out, more or less related to each other, or if they are not so originally, they marry, and become related in that way. Another reason of the want of interest in the story is its want of cohesion. The attachment of Major Vandermere to Helen Gray, and their eventual marriage, are quite unconnected with the only plot, if we may so call it, which the story contains, namely, Walter Brooksby's search after his uncle's heiress, and his own wife; and there is no particular appropriateness in the ultimate discovery of both these in one and the same person. The truth is, that the author, as many will do nowadays, has overweighted herself with materials, half of which, if judiciously combined, would suffice to make an interesting story. There is, we must say, a great want of truth to nature in the scenes where Mabel, alternating between the beliefs that the man whom she loves is and is not attached to her sister, plays fast and loose in rapid succession with a man old enough to be her father, to whom, in the first moment of disappointment, she has engaged herself. Her

conduct is that not only of an unwise, but of a grossly ill-mannered woman, such as the author by no means intends to represent. We must remark upon the extraordinary "name-formations" in which the author indulges. "Zenningly," "Dorafeld," and "Home-sefton," for places, and "Smichtt" for a person (even though a German), do not look at all like any names which we expect to find on the map or in the directory of this or any other country. Writers ought really to learn that they have no more right to make impossible names than impossible animals. Major Vandermere might quite as easily have ridden a sky-blue pony as have lived at a place called Dorafeld, in Great Britain at all events. Novelists, quite as much as painters, are bound to preserve accuracy in small accessories of this kind.

The Vicomtesse de Kerkadec would seem from her name to be French, or at least Breton; but either her observation of her countrymen has been limited, or she has not the gift of recording it with any life-likeness. Certainly the scene is laid in the South, and, in the description of the ways and manners of Languedoc, a Breton has probably no advantage over a complete foreigner. Anyhow, we have seldom read so un-Frenchlike a book as 'Madeleine,' for one that professed to give a description of French life. The "goody"-talking people, who think it wrong to dance on Sunday, are curiously unlike any French we ever met; others are conventional; others mere caricature; but not one character in the whole story shows any capacity in the author for writing fiction. It is more the kind of book which an unimaginative school-girl might write after reading a history of France and one or two of Miss Peard's stories. The charm of these last we miss entirely; but the attempt at depicting the romance of small bourgeois life, here reduced to a mere chronicle of small beer, with an epidemic thrown in at the end to give some interest, shows the school to which the author attaches herself. Unfortunately, to fiction of this school, dullness and want of truth are fatal.

There is little sensationalism in 'The Capel Girls,' neither is there any morbid dissection of fashionable vices, yet the book is interesting as a picture of a family circle, such as we may see any day. The plot is evidently only meant as a peg for the characters, and the latter are possessed of considerable individuality. One great truth is illustrated in the book before us,—a truth which, unfortunately, too seldom receives practical recognition. That truth is that a man may appear to the world a good-natured, kind-hearted, genial person, and yet be thoroughly selfish and worthless. One of the best portraits in 'The Capel Girls' is that of the eldest of the sisterhood, who is so charming a creation that many girls who read of her may be almost reconciled to the possibility of becoming some day old maids. All the *dramatis personæ* are simply drawn, and we are spared that straining after effect to which most modern novelists are so much addicted. Neither are there any painful endeavours to be clever and witty. In fact, the book is a homely chronicle of a homely family, and, consequently, will meet with extensive sympathy. Perhaps the author is a trifle too didactic and fond of administering doses of lay sermons; but it must be admitted that, in the latter, there is much good sense and right

feeling. A religious spirit permeates every chapter, but the religion never degenerates into cant.

The difficulty of distributing praise and blame fairly between author and translator makes one shrink from the task of criticizing a translation of a book one has not seen. A novel is, or should be, a work of art, however hard one finds it to cherish an ideal so seldom realized, and only bears translation a shade better than a poem. Mere narration, as a rule, need suffer little; but the freshness of conversation and the delicate touches of character mostly disappear. As far as one can guess, the parts of 'Success' which have been translated best are just those which can be most conveniently skipped. Descriptions of sunsets do not interfere much with the course of a story, and can be given with the same easy flow in all modern languages. Scenic effects are now as much required, or at least employed, in novels as upon the stage; and an account of a disaster unaccompanied by a thunderstorm no more satisfies us than our portrait done with a common background of pillar and red curtain. These things, of which there are too many in 'Success,' can, however, as has been said, be well skipped; and the story is pleasant and simple, and not without interest. The fault of it is, that the upshot is too easily guessed from the first, and what forms the real climax by no means coincides with the physical end of the book. A marriage in which a title was exchanged for money, arranged solely for the convenience of the fathers of the young people, developing into an affair of love, forms the stuff of the story, and the *integratio amoris* could not fail to be the true climax. But it takes half a volume more to finish a side-episode, arising from the fact that the hero was the owner of a great mining estate, on which there had been a violent outbreak of the hands. A strike is no new material with which to aid the working out of the intricacies of love; but it is the love-affair that ought to keep the prominent place. In 'Success' it seems to us that the author has marred his effect in the fascination of his labour. But the book is pleasant to read, and has some touches of gentle humour; while the translation, on the whole, has obviously been made with taste and care.

When, last week, we gave a list of the chief French novels of the summer, we remarked upon a certain heaviness, which is still observable in the only two that have appeared during the last few days. 'L'Idole' is a work of talent, but is as dull as 'Daniel Deronda.' M. Sarcey's volume of short stories is more readable, but not of such serious value, and not worthy of the reputation of the great critic. MM. Erckmann and Chatrian have just issued a new volume, which relates the adventures of a foreman of works employed in the construction of the Suez Canal. It is one of their Alsatian stories bodily transferred to Egypt, and is not in the least an attempt in a new direction. Let us take this opportunity of calling the attention of our readers to the fact that there exists a French translation of 'Le Legs de Cain,' the first part of Sacher-Masoch's admirable series of stories, of which we last week noticed the appearance of the second. We may also note the existence of another light French work of the present year, which we did not mention at the time that it

came out, namely, a second volume of the amusing "Nouvelles" of "Mérinos" (Eugène Mouton). M. Zola's new novel, which has been appearing in *feuilleton*, and will soon be published as a volume, has excited the fury of French critics, on account of the author's use of Parisian "slang."

OUR LIBRARY TABLE.

THE firm of Lévy, of Paris, have published during the present week, *Fragments of a Life of Napoleon*, by De Stendhal. The almost unreadable manuscript of this work has been in M. Lévy's pigeon-holes for many years, and has at last been brought out, with the help, we hear, of a good deal of guess work. "Stendhal" was one of the worst penmen that ever lived. The *Fragments* deal chiefly with the Italian campaigns, and contain some hitherto unpublished opinions of Napoleon on some of his subordinates. In his Preface, "Stendhal" uses the following words: "En sa qualité de souverain, Napoléon écrivait mentait souvent. Quelquefois le cœur du grand homme soulevait la croute impériale; mais il s'est toujours repenti d'avoir écrit la vérité et, de temps en temps, de l'avoir dite. A Sainte-Hélène, il préparait le trône de son fils, ou un second retour, comme celui de l'île d'Elbe. J'ai tâché de n'être pas dupe. Pour les choses que l'auteur a vues ou qu'il croit vraies, il aime mieux employer les paroles d'un autre témoin, que de chercher lui-même à fabriquer une narration. Je n'ai pas dit de certains personnages tout le mal que j'en sais; il n'aurait point dans mes intentions de faire de ces mémoires un cours de connaissances du cœur humain. J'écris cette histoire telle que j'aurais voulu la trouver écrite par un autre, au talent près. Mon but est de faire connaître cet homme extraordinaire, que j'aimais de son vivant, que j'estime maintenant de tout le mépris que m'inspire ce qui est venu après lui."

WE have on our table *Goldsmith's Deserted Village* and *Spencer's Faery Queen*, edited and annotated by C. H. Pearson, M.A., and H. A. Strong, M.A. (Melbourne, Mullen).—*The Theory of Sound in its Relation to Music*, by Prof. P. Blaserna (King).—*The Athenian Empire*, by G. W. Cox, M.A. (Longmans).—*Glasgow and the Clyde*, by R. Gillespie (Simpkin).—*The Crisis of 1876*, by M. Sternberg (Wilson).—*Engelsk Läsabok*, utgivet af Dr. V. Sturzein Becker (Stockholm, Férlag).—and *In Quest of a Creed* (Stock). Among New Editions we have *The Manual of Heraldry* (Virtue).—and *A First Book on the Theory of Music*, by L. Gibson (Weekee). Also the following Pamphlets: *The Channel Tunnel; or, England's Ruin*, by Cassandra (Clowes).—*Resources: a Treatise on "Waters and Springs"*, by E. Palissy, translated by E. E. Willett (Brighton, Smith).—*The Latest Row in Dame Europa's School* (Houlston). and *The Office of the Sunday School in the Church's System*, by J. Palmer (Hamilton, Adams & Co.).

LIST OF NEW BOOKS.

Theology.

Caunter's (M.) *Stories of Genesis for the Little Ones*, 1/6 cl.
Commentary on the Epistles and Gospels, Part 3, Trinity, cr. 8vo. 4/6 swd.
Cruden's (A.) *Complete Concordance to Holy Scriptures*, f/6
Horne's (W.) *Reason and Revelation*, 8vo. 12/ cl.
Offices of the Old Catholic Prayer-Book, cr. 8vo. 3/6 cl.

Law.

Hibert's (C. F.) *Merchant Shipping Act, 1876*, 8vo. 3/ swd.

Poetry.

Ferris's (H. W.) *Poems*, 12mo. 5/ cl.

History.

Guizot's *History of France*, trans. by R. Black, Vol. 5, 24/ cl.
Science.

Field's (G. P.) *Aural Surgery*, cr. 8vo. 6/ cl.

General Literature.

Adventures of Captain Mago, by Léon Cahun, cr. 8vo. 10/6 cl.
Brown's (J. H.) *Love's Labyrinth*, cr. 8vo. 2/6 cl.
De Liefde's (J. B.) *Maid of Stralsund*, 8vo. 7/6 cl.
Jennings's (Mrs. V.) *Rachel: her Life and Letters*, cr. 8vo. 7/6 cl.
May's (M.) *Marks upon the Door*, cr. 8vo. 10/6 cl.
Mercy Philbrick's *Choice*, cr. 8vo. 10/6 cl.
Tregame's (Louis) *Adventures in New Guinea*, 12mo. 6/ cl.
Worboise's (E. J.) *Lady Clarissa*, cr. 8vo. 5/ cl.

THE INTERNATIONAL CONGRESS OF ORIENTALISTS.

ON Friday, the 8th, the members of the Congress, refreshed by the excursion of the previous day to Peterhof, met to take part in the Archaeological Section, over which M. Jules Oppert presided, with MM. Tiesenhausen and Stickel as Vice-Presidents. After a few introductory words from the President, M. Gorski-Plaonow read a paper on a Hebrew manuscript of the Pentateuch, written on vellum, which purports to be the work of the twelfth century. In order that the Section might be better able to form an opinion on the genuine antiquity of the manuscript, the speaker displayed photographic copies of two folios, and considerable interest was shown by members in the question, concerning which, however, no definite result was arrived at. M. Lerch followed M. Gorski-Plaonow with a very interesting communication on the coins of the Princes of Bokhara, and was proceeding to explain the process by which he had arrived at the reading of the legends they bore, when he was interrupted by the President, who reminded him of the rule which limited the time allowed to each speaker to a quarter of an hour. This important rule was repeatedly ignored during the Session, and consequently many papers of great interest were left unread, and many questions which might have been productive of useful discussion were never put to the Sections.

After M. Stickel had exhibited the model of an apparatus he has invented for displaying both sides of a coin at the same time, M. Oppert introduced M. Lagus to the Section, and in the course of his remarks he paid an eloquent tribute to the memory of the late M. Eneberg, who recently died at Mosul, whither he had gone with Mr. George Smith on his last expedition, and whose death was to be so soon followed by that of his companion. In reading his paper 'On the Cufic Coins and other Oriental Antiquities found in Finland,' M. Lagus offered a solution of the difficulty which had arisen as to the languages to be used in the discussions, by addressing the Section in Latin. Large numbers of Arab coins have, he stated, been lately found in Finland, and he argued that the presence of these, together with that of the other Oriental antiquities of which he spoke, furnish evidences of the commercial intercourse which anciently existed between Arabia and the north of Europe, and to which must be attributed the knowledge of those northern latitudes which was possessed by early Arab writers.

The two next papers were read by M. Lieblein, of Christiania, and M. Harkavy. The first was 'On the Identification of the Khitas of the Egyptians with the Hittites of the Bible,' and the second had reference to a country lying to the north of Idumea, which was known in the Egyptian inscriptions as Tenu. After some supplementary remarks on the last subject, especially as to the meaning of the name Tenu, the President put to the Section the question whether the chronological data furnished by the legends on the coins of the Mussulman dynasties are to be considered more worthy of credit than those of chronicles and of other monuments not official. With reference to this subject, M. Terentief showed, by the example of the inscription on the tombstone of Mohammed Khan, that such records are not by any means worthy of implicit trust, and after a few remarks by M. de Rosny on an Inscription on a small Bronze Statuette found on the Shores of Lake Baikal, and a communication from M. Chwolson, on his theory that the Philistines were an Egyptian military colony, the Séance was brought to a close.

In the evening of the same day, a meeting of the Government Delegates was convened, to consider where the next Congress should be held. M. Grigorief presided, and, at the outset, M. de Gubernatis announced that he was authorized to say that should the choice of the Council fall on Italy, the members of the Congress would be made heartily welcome by the Italian Government. No counter proposition being forthcoming, Florence was chosen as the place for the next

Session, and after some little discussion as to the manner in which this decision should be made known to the Congress, the meeting dispersed.

On the following morning, the Section devoted to the Religious and Philosophical Systems of the East met, under the presidency of Prof. Douglas, with whom were associated Prof. Chenery, of Oxford, and M. de Gubernatis, from Florence, as Vice-Presidents. Papers were presented to this Section by MM. de Gubernatis, Von Mehren, Eitel, Chalmers, Lieblein, Naoufal, Oppert, and others; but owing to the fact that two o'clock had been fixed by the Committee for an excursion on the Neva, the time for the disposal of business was too short to allow of all the communications being read. During the meeting, M. Oppert received a telegram announcing the death of Mr. George Smith, and in a few feeling words he communicated the sad event to the assembly, by whom the intelligence was received with expressions of marked regret. By a curious coincidence it thus fell to the lot of M. Oppert to be on two successive days the bearer of the tidings to the Congress of the deaths of two scholars, M. Eneberg and Mr. George Smith, who were united in their studies, and whose untimely fates were met in the pursuit of the same scientific object, and within a few days of each other.

At two o'clock the foreign members were entertained at a *déjeuner* at the Russian club, after which they embarked on quite a small fleet of Imperial steamers, and proceeded up the Neva for a considerable distance. The vessels were then turned down one of the branches into which the river divides itself above St. Petersburg, and at the end of a most enjoyable cruise among the islands in the Delta, the excursionists were invited to the Yacht Club, where a sumptuous luncheon awaited them, and from which they returned to St. Petersburg only in time to be present at a reception given by the Italian Ambassador, Chevalier de Nigra.

The next day, Sunday, was devoted to an expedition to the Palace of Tsarskoe-sélo, where, having inspected the numerous curiosities, the members were entertained at dinner by Prince Galitzin, their host of the previous Sunday.

Monday being a feast day was given up to sight-seeing; and on Tuesday, at one o'clock, the formal concluding meeting was held, at which the decision arrived at by the Government Delegates as to the place of the next meeting was made publicly known. A proposal was also submitted to the meeting that representations should be made to the Governments of England and Russia on the necessity of extending mutual protection to scientific travellers of both nations in Central Asia, and a resolution was passed to the effect that the support of the Governments of Europe should be solicited for the publication of the Chronicle of Tabari, as was proposed by M. Schefer at the conclusion of the Section over which he presided. Thus ended the third Session of the International Congress of Orientalists, which was no less distinguished for the scientific materials which were laid before the members than for the princely hospitality which was offered them.

R. D.

"DER SAENGER DER FREIHEIT."

Graz, Sept. 1876.

THE usual quiet of the pleasant capital of Styria has been broken recently by the death and funeral of Count Anton Alexander Auersperg. To the literary world Count Auersperg was better known under the *nom de plume* "Anastasius Grün," and there is no student of modern German literature who is unacquainted with 'Die Brücke,' and the 'Sieg der Freiheit,' by him. As a statesman, Count Auersperg held an estimable position. His ideas were decidedly liberal. He was one of the promulgators and unflinching defenders of the Constitution, on which account his popularity as a patriot has extended into every province of the empire. He was in many respects a man whose principles were too advanced to suit the conservative autocratic ideas of the Austrian Court, and, though respected, he was never a favourite there.

Count Auersperg was in his seventy-first year, having been born at Lâibach, in Carniola, on April 11, 1806. He came to Graz after the death of his father; and between the years 1825-29 appeared his first poems. In 1830 he published 'Der letzte Ritter' and the 'Spaziergänge eines Wiener Poeten,' two works in a new style, which at once raised him to the highest rank of living German poets. From this period on, he gave several other works, in prose and verse, to the world, all of which are inspired with an unquenchable love of liberty. In 1861, Count Auersperg became a life-member of the House of Lords, and in 1863 the Emperor conferred on him the dignity of Privy Councillor. The freedom for which the poet had sung in youth and manhood, he steadfastly defended in maturer years, and added to his other varied accomplishments that of being a pleasing orator. His last illness, a sudden stroke of paralysis, was short, but painful, and ended in his death on September 12.

The funeral took place on the 15th, and was attended by delegates from almost every literary society in Austria, from the Reichsrath, from the Ministry, from the Municipal Governments of Vienna, Graz, and Lâibach, and from the Universities of the first two cities. Graz itself was draped in black, and many of the shops were closed. The procession started from the deceased's palace, and proceeded to the railway-station, where a special carriage was in readiness to convey the body to the country burying-ground of the family. More than 100 large wreaths, bearing appropriate mottoes—the gift of societies of which the poet was a member—covered the coffin.

It would be hard to find a parallel for Anastasius Grün. In almost every respect he seems to have achieved the commonplace idea of earthly happiness. As a poet, he won brilliant and lasting honours; as a statesman, he earned the gratitude of millions, to whom he had helped to give a constitution; as a patriot, he was trusted and respected even by members of the opposite party. Of a noble and ancient family; of great wealth and lordly possessions; the father of a devoted son, and idol of a wide circle of appreciative friends—Anastasius Grün could certainly ask for little more.

In closing, I will but quote a resolution passed by the Common Council of Vienna, on hearing of the poet's death, to show how he was esteemed:—"Anastasius Grün it was who first came forth as the apostle of a warm and deep-felt faith in a free Austria; Anastasius Grün it was who, with the unwavering loyalty of conviction, and with manly cheerfulness, defended the banner of liberal progress in Parliament, and even on the steps of the throne; Anastasius Grün it was to whom the Fatherland owed so much for his love of liberal development, and who has acquired for himself the right, through his works, to fill one of the most beautiful pages of the history of his country."

A. N. O'N.

Literary Gossip.

MR. WILLIAM GILBERT is engaged upon a work dealing with the municipal government of London, in which he will adduce many curious facts showing how the affairs of some of the City companies are administered, and in particular how their building leases are devised in such a way as to enable them to evade paying the Inhabited House Duty. The work will probably be published early next year, by Messrs. Daldy, Isbister & Co.

THE publishing season is close at hand, and the dulness of the autumn, which has been relieved by only three or four books of any consequence, will soon be at an end. Miss Martineau's Autobiography, which will fill three volumes, is promised by Messrs. Smith & Elder. The same firm announce 'English Thought in the Eighteenth Century,' a Lite-

rary Study, by Mr. Leslie Stephen; 'Reasonable Service,' by Mr. Page Roberts, one of the few good preachers that the Broad Church party can boast of; and the second volume of Mr. Pike's 'History of Crime.' Mr. Bentley promises a volume on his Palestine explorations, by Capt. Warren; two volumes of Sermons by the late Dean Hook; 'Memorials of the South-Saxon See of Chichester,' by the Rev. W. R. Stephens; the Correspondence of Balzac, with a Memoir by his sister, Madame de Surville; Letters addressed by Mrs. E. B. Browning to Mr. R. H. Horne; a book by Lady Herbert that we have already mentioned, 'Mothers, Wives, and Daughters'; and translations of M. Havard's 'Picturesque Holland' and of Prof. Duncker's 'History of Antiquity.'

MR. BENTLEY will publish during the season novels by Miss Broughton; by Mrs. Alexander, the author of 'The Wooing O't'; by Miss Mathers, the author of 'Comin' thro' the Rye'; by Mr. Albany Fonblanque, and Mr. R. Buchanan. He will also issue Mr. Julian Hawthorne's new novel, which has been appearing in an American periodical.

CAPT. WARREN's book, which we have mentioned above, contains an account of some of the principal difficulties he met with in his explorations in the Holy City, and of his travels in the Jordan Valley, together with a description of his visit to the Samaritans. Its title will be 'Underground Jerusalem.'

MR. LEWIS MORRIS's 'Epic of Hades,' which had the drawback of being framed on a scale somewhat disproportioned to the title, will shortly be reissued, with such additions as will render the poem more complete and also more in keeping with the scope of the title.

MESSRS. HENRY S. KING & Co. have challenged the accuracy of our intimation last week, that Mr. Longfellow had failed in obtaining permission to include certain poems by Mr. Tennyson in a collection which he has recently made. No contradiction, however, can alter the fact that Mr. Longfellow is under the impression that a request preferred for him to be allowed to use these poems was refused. Of course, he is at liberty to reprint in the United States any poems by living English authors, but the volume containing them cannot be circulated in this country without the consent of the proprietors of the English copyrights. If Mr. Longfellow be in error in thinking that, while an affirmative reply was given in all the other cases, a negative one was conveyed to him as regards the poems of Mr. Tennyson, or in believing that the request was duly made in the latter case, it is easy to remove all misapprehension by gracefully according him the permission which he desires to have.

THE lecture on the Eastern Question which was lately delivered by Mr. E. Jenkins, M.P., at Dundee, is about to be published under the title of 'The Shadow on the Cross.'

MESSRS. GEORGE ROUTLEDGE & Sons' list of announcements includes the following books: The Poetical Works of Longfellow, including many copyright poems, with all the original illustrations by Sir John Gilbert, R.A., and six new woodcuts by the same artist; the Book of British Ballads, edited by Mr. S. C. Hall; the steel plate edition of the Waverley Novels, with the author's notes; Miss Edge-

worth's Tales and Novels, in ten volumes; Mr. George Barnard's 'Drawing from Nature'; the Poems of Oliver Goldsmith, with illustrations by Mr. Birket Foster; the 'Bab Ballads,' by Mr. Gilbert (complete edition); 'Science in Sport made Philosophy in Earnest,' by Robert Routledge; the 'Baby's Opera,' by Walter Crane; 'Little Wideawake' for 1877; Routledge's 'Every Boy's Annual' for 1877, &c.

THE Monthly List of Parliamentary Papers for August, 1876, contains fifty-nine Reports and Papers, twenty-one Bills, and twenty-nine Papers by Command. In the first class will be found Tables showing the Progress of British Merchant Shipping, the Finance Accounts of the United Kingdom for the Year ended March, 1876; Report and Evidence on Oyster Fisheries, and Return of Merchant Ships detained for Unseaworthiness. The Papers by Command comprise the Return of Traffic Receipts and Working Expenditure on the Railways of the United Kingdom for the Year 1875; the Annual Statement for the Year 1875 of the Trade of the United Kingdom with Foreign Countries and British Possessions; and the Statistical Abstract for the United Kingdom, 1861 to 1875 (23rd number).

MESSRS. W. COLLINS & Co. have in the press 'A Grammar of the Latin Language,' by the Rev. C. U. Dasent, and edited by Dr. Leonhard Schmitz, and 'Exercises in Latin Prose Composition,' by Dr. Schmitz.

PROF. F. J. CHILD, of Harvard, the leading Chaucer scholar of the United States, has promised to write a paper, a treatise, in fact, on the Language and Versification of Chaucer in his Canterbury Tales, as contained in Mr. Furnivall's six-text print of the tales for the Chaucer Society.

THE Roxburghe Club has just issued to its members a singularly beautiful book. It is an "Apocalypse of St. John the Divine, represented by figures reproduced in fac-simile from a MS. in the Bodleian Library." There are forty-six pages of illustrations, each page containing two subjects, done in colours, and of the most curious designs. The Rev. H. O. Coxe is the editor, and contributes a very interesting Preface. The members' copies are printed on vellum, and are each enclosed in a case, lettered as a book.

THE Rev. J. W. Ebsworth has begun his edition of the Bagford Ballads for the Ballad Society. He will not print the duplicates of those in the Roxburghe Collection, but leave them to appear in Mr. W. Chappell's edition of the Roxburghe Ballads.

MRS. HAWES's 'Chaucer for Children' will be ready before Christmas, with some coloured pictures and several woodcuts by the authoress. Though specially meant for children, the book follows the best text, has a sketch of the pronunciation based on Mr. A. J. Ellis's researches, and follows manuscript authority in its cuts. It is, therefore, suited to all readers. It gives long extracts from five of the Canterbury Tales, and hooks them together by narrative. A glossary, foot-notes, and accounts of Chaucer's life and times will be found in the book.

THE Rev. A. W. Scott Robertson, the Hon. Sec. of the Kent Archaeological Society, whose knowledge of some twenty-five miles of the old Canterbury road probably exceeds that of any other living man, has kindly promised to

write a paper on the road and Chaucer's Pilgrimage, for the Chaucer Society, to accompany the fac-similes of Ogilby's map of the road, which shows Bob Up and Down so well, and William Smith's quaint manuscript plan or bird's-eye view of Canterbury in 1589, which Mr. Furnivall is having engraved for the Chaucer Society.

WE have to apologize for an inadvertence in attributing the lines 'On the Time-Poets,' to Thomas May, when noticing Mr. Ebsworth's edition of the 'Choyce Drollery' in last Saturday's *Athenæum*. It is not as yet known to whom the authorship of the lines belongs.

M. DAUDET and M. Hector Malot will each issue a novel in the course of the winter.

PROF. LIGHTFOOT requests us to say that there is no truth in the report that he is to be joint editor with the Bishop of Gloucester and Bristol of a 'Commentary on the Bible,' to be published by Messrs. Cassell.

THE *Débats* announces that a Lyons ecclesiastic has discovered a MS. treatise on the Eucharist, written by Saint Francis de Sales.

THE death is announced of the Rev. Robert W. Fraser, M.A., of Edinburgh. The deceased gentleman was the author of a number of books on different branches of literature. Amongst them 'Turkey, Ancient and Modern,' 'The Elements of Physical Science,' &c.

THE first meeting of the Congress of German Philologists at Tübingen will be on Monday (the reception taking place the previous evening), when Prof. Herzog will lecture on the Roman settlements in Württemberg, and Prof. Bender on the Tübingen Humanists of the sixteenth century. After this the separate sections meet. The president of the Paedagogic is Dr. von Schmid; of the Archaeological, Prof. Schwabe; of the Oriental, Prof. von Roth; of the Germanistic, Prof. A. von Keller; of the Romance, Prof. Holland; of the Mathematical, Prof. Hauck. The proceedings will last three days. Among other addresses will be one by Hofrath Bartsch, on Dante's attitude towards the Roman Church of his day.

MR. ASHEY STERRY'S 'Boudoir Ballads' will be published immediately by Messrs. Chatto & Windus.

In the notices which have been given in different journals of the late Major-General Sir Thomas Seaton, who died recently in Paris, no mention seems to be made of his literary acquirements. He was the author of 'A Manual of Wood Carving,' published last year by Messrs. Routledge & Sons, who are about to issue a cheap edition of another of his works, 'From Cadet to Colonel.'

AN Italian translation of Mr. Tennyson's English idylls and miscellaneous lyrical poems, together with 'Enoch Arden,' by Carlo Facioli, has been published at Verona.

SCIENCE

BRITISH ASSOCIATION.

MATHEMATICAL AND PHYSICAL SCIENCE. (SECTION A.)

THE proceedings of Thursday were continued by a proposal from Prof. James Thomson to introduce special names for two absolute units of force, namely that based on the *decimètre*, kilogram, and second, which he proposes to call the *crinal*, and that based

on the *mètre*, tonne, and second, which he calls the *funal*, the one being a force which could suitably be sustained by a hair (*crinis*) and the other by a rope (*funis*). The unit of work to be used in conjunction with the former will be the *decimètre-crinal*, and in conjunction with the latter the *mètre-funal*. One horse-power is about three-fourths of a *mètre-funal* per second.

Sir W. Thomson and Prof. Everett expressed their concurrence in these proposals, as usefully supplementing, for the purposes of practical engineers, the system of units recommended by the British Association Committee (the C. G. S. system), Sir William remarking that during the two sessions in which he had used that system with his class they had attained much greater proficiency in dynamics than before.

Sir W. Thomson's paper, 'On Precessional Motion in a Liquid,' was illustrated by some striking experiments with gyrostats, which were repeated at the Soirée given by the Philosophical Society in the evening. He defines precessional motion in a liquid as continuous change of axis of rotation, accompanied by distortion. Without distortion the change of axis of rotation could not be produced in a perfect liquid. The components of velocity in the precessional motion of a liquid are linear functions of the co-ordinates, and the moment of momentum of the liquid within a given space varies on account of a different portion of liquid occupying it. An ellipsoidal globe filled with water was exhibited to the Section, and when it had been made to revolve rapidly for some time, so as to communicate its rotation to the water, it showed the same properties as a solid gyrostat.

Sir William next described an astronomical clock invented by himself. It is driven by mechanism which would keep nearly correct time if left to itself. This mechanism turns the escapement arm (which takes the place of the usual wheel), and the extremity of this arm comes into alternate contact with two bevelled pieces forming part of the principal pendulum. These contacts are extremely gentle, and thus maintain the motion of the pendulum without disturbing its natural rate. An adjustment is provided for securing that they shall be made at the lowest point of the swing. The clock contains a subsidiary pendulum forming part of the governor, besides the principal pendulum. The escapement arm is not rigidly attached to the shaft which carries it, but can turn on it with moderate friction. This arrangement conduces to the gentleness of the impulse given to the pendulum, which is scores of times feebler than the impulses given by the teeth of the escapement wheel of an ordinary astronomical clock.

He next described and exhibited his new form of ship's compass. The card is very light, the central part being a mere framework of wire, and only the rim which carries the letters and divisions being continuous. Instead of one large needle there are several small ones, not larger than ordinary darning-needles, arranged parallel to one another. These small needles have the advantage of not exercising sensible induction upon the two large balls of soft iron, which form part of the arrangements for compensating the effect of the iron of a ship. This induction is a great source of complication and error in ordinary compasses. A special arrangement is provided for facilitating the observation of azimuths; and the movable magnets, which are employed for one of the corrections, are hinged in the middle, so that when folded up and put away in their box they will have opposite poles together, and will exercise no disturbing influence on the compass.

In giving the concluding Report of the Tidal Committee on Friday, Sir William commented strongly on the shortcomings of the Admiralty. The tide-tables which they publish take no account of the semi-diurnal component. There may be a difference of several inches between the morning and the evening tide; but this difference, which is often of great importance to the mariner, is ignored. The Indian Government has been considerably in advance of our Home Government in this respect, and has made successful investiga-

tions regarding diurnal tide in India. The work of tidal investigation had been commenced by Prof. Haughton, the British Association had followed, and the Admiralty had sat with its hands folded, leaving to private individuals to do the work which was its own especial duty.

On a later day, Sir W. Thomson said, in reply to some comments made in the Geographical Section, that he was far from intending discourtesy to any member of the Admiralty or of the Hydrographic Department, but he did strongly feel that the Government ought to take the initiative in the investigation of a subject of such importance to navigators as the diurnal component of the tides on the British coasts, a component which at West Hartlepool might make a difference of more than twenty inches.

Much interest was excited by a paper, by Prof. Osborne Reynolds, on vortex rings, illustrated by beautiful experiments in a large tank of water, through which vortex rings were sent from a box at one end, containing coloured water, and opening into the tank by a large circular hole furnished with a sliding door.

Vortex rings sent through the tank increased in size, and, at the same time, diminished in velocity, two changes which he believed to be connected by the law that the momentum of the ring remains constant. By colouring a portion of the liquid in the tank, and sending a ring through it, it was shown that no disturbance is left behind the ring; the ring simply takes to itself a portion of the water through which it passes, and, by thus adding to its mass, loses velocity. When carefully examined, the moving mass is seen not to be merely a ring, but a spheroid, containing the ring within it; and this mass passes through the water with much less resistance than a solid spheroid of the same size. He had measured the resistance of such a ball when moving at high speed through the water, and had found it to be about ten times the surface friction, the ball being completely immersed. It was owing to viscosity in water that such a body experienced more resistance than a thin flat plate of the same surface moving edgewise, for in a perfect fluid their resistances would be equal. Much surprise was excited by the extremely small resistance exhibited by a thin curved plate, shaped like a saucer, and moving through the water with its convex side foremost.

Dr. C. W. Siemens described and exhibited his bathometer. The indications of this instrument primarily measure the intensity of apparent gravity at the place of observation, and it is intended to use it for measuring the depth of the sea; since, it is to be presumed that, owing to the small specific gravity of water as compared with rock, gravity will be less intense over deep than over shallow water. The principle of its construction is extremely ingenious. It contains a large and strong vessel of mercury, with a flexible bottom called a diaphragm, this latter being sustained by a strong spiral spring, and also urged downwards by a suspended weight. Increase or decrease of gravity causes the diaphragm to descend or ascend, and the effect thus produced is exhibited to the observer by the motion of a mercurial column in a long glass tube, similar to a thermometer tube, except that, instead of being straight, it is coiled in a flat horizontal spiral. The mercury in this tube is in connexion with that in the large vessel; and to prevent pumping from the motion of the ship, a plate with a small perforation is interposed. With this construction, the motion of the ship is actually found to be beneficial, as it prevents the mercury from sticking. The apparatus is as far as possible protected from changes of temperature, and is compensated for such changes as it will experience. Observations were made with the instrument in a recent voyage of the *Faraday*, and were compared with observations simultaneously made by direct sounding. The result was that, when the scale of the instrument was fixed by two of these comparisons, the others agreed fairly. The depth which the instrument may be expected to indicate is the average depth over an area from a quarter of a mile to a mile in diameter.

Another instrument was described by Dr. Siemens, for indicating changes in the horizontal component of gravity in a given direction. It is to be used on land, and must be very firmly supported. Sir W. Thomson proposes to use it for measuring the moon's attraction.

Most of the papers on Saturday were, as usual, of a very technical character. We may, however, mention one by Mr. Thomas Muir, of Glasgow High School, on a certain method of finding all the convergents of a given fraction; a convergent being defined to be a fraction nearer to the given fraction than any fraction with a smaller denominator. The well-known method by continued fractions gives convergents, but not all the possible convergents. Other convergents will be found by substituting for the denominator of the last continued fraction employed any integer exceeding its half.

The Committee on Geometrical Teaching gave in their Report, in which they expressed their general approbation of the Syllabus lately issued by the Society for the Improvement of Geometrical Teaching.

On Monday and Tuesday the Section was divided into a main and a sub-section; the latter being devoted to papers connected with meteorology.

The Underground Temperature Report insisted on the necessity of employing special means to prevent circulation of water in bores in which temperatures were observed. This necessity, even in the case of observations taken at the very bottom of a bore, had been placed beyond reasonable doubt by experiments made in a very deep bore near Berlin, by Herr E. Dunker, of Halle. These experiments had shown a difference of 3° Réaumur between the temperatures observed with and without a plug, at the depth of 3,390 feet, which was the depth to which the bore had attained at the time of making the experiment. Several kinds of plug were tried, and are described in Herr Dunker's paper, which is published in the *Zeitschrift für Berg-Wesen*, XX. Band, 2 and 3 Lieferung. The Committee are engaged in testing other forms of plug which will involve less labour and expense in their use.

The deepest of the successful observations was at the depth of 3,390 Rhenish feet, where the temperature was 37° 2 Réaumur, and the estimated temperature at the surface was 7° 2, giving an increase of 30° in 3,390 feet, which is at the rate of one degree Fahrenheit in fifty Rhenish, or about fifty-one English, feet; but the increase was not uniform, and was, on the whole, much slower at great than at small depths. The Committee had constructed some thermometers of a new pattern, and extremely slow in their action, for observations of temperature in the sides of tunnels and mining galleries.

Sir W. Thomson propounded a theory of the formation of the peculiar arrangement of clouds called a mackerel sky. His theory is that just as wind blowing over water produces waves, so one portion of air moving with considerable velocity over another must produce waves of air. The successive ridges of cloud in the mackerel sky are the crests of these waves, and the clear spaces seen between them are the troughs. Waves of air, however, though a necessary, are not a sufficient condition for the formation of a mackerel sky. Certain conditions as regards temperature and moisture must also be fulfilled, and the alternate ascent and descent of each portion of air as it rises above, and falls below, its mean level will then produce alternate condensation and evaporation. Mr. Glaisher remarked that, in his balloon ascents, whenever he ascended from a cold stratum into a warm one in contact with it, he always observed that the clouds were flat bottomed.

In a paper by Prof. Clerk Maxwell, which was ordered to be printed in *extenso*, it was recommended that powder-magazines and other buildings should be protected against lightning by covering them with a wire netting instead of employing lightning-rods.

Among the papers read in the main Section was

a description, by Mr. Colin Brown, of his "voice harmonium," an instrument which contains special arrangements for obtaining just intonation in all keys. We understand that it has obtained considerable local repute as a practical solution of this difficult problem.

The proceedings on Tuesday were notable for the first publication of the discovery, recently made by Dr. Kerr, of the Free Church Normal College, Glasgow, of a new relation between magnetism and light. The new fact discovered is that if plane polarized light be allowed to fall on the polished extremity of the soft iron core of an electro-magnet, and a Nicol's prism be fixed in such a position as to extinguish the reflected light, the current being not yet sent through the coil of the magnet, on sending the current, the light is restored. In order to increase the magnetization of the reflecting surface, or of that portion of it which is utilized, the wedge-shaped termination of a mass of iron is held close over it.

Sir W. Thomson remarked that this experiment proved iron to possess, in an enormously higher degree, the property discovered by Faraday for heavy glass.

Dr. Kerr's name is well known among physical experimentalists for his recent discovery of the doubly refracting property produced in a dielectric by electric induction.

Another paper of great interest was by Mr. Crookes, 'On the Influence of the Residual Gas on the Movement of the Radiometer.' Mr. Crookes now accepts the theory that the movement of this very remarkable instrument, invented by himself, is not due to a direct repulsion exerted by light on the vanes, but to a mutual action called out between these vanes and the very attenuated gas remaining in the instrument. It is well known that, with a moderately good vacuum, the motion becomes more rapid as the exhaustion proceeds; but Mr. Crookes has recently succeeded in producing such complete exhaustion that he not only reaches the point of maximum effect, but goes far beyond it, so far that the effect nearly ceases.

He measures the vacuum by means of a special apparatus, in which, instead of continuously rotating in one direction, as in the ordinary radiometer, the moving part is suspended by a glass fibre, which it twists in opposite directions alternately. The movement is started by radiation from a lamp; the lamp is then screened or removed, and the observation consists in noting the successive amplitudes of vibration when the instrument is left to itself, a mirror and spot of light being employed for this purpose. The amplitudes form a decreasing series, with a regular logarithmic decrement. The logarithmic decrement is nearly constant up to the point at which the vacuum is apparently equal to a Torricellian vacuum, the mercury in the gauge standing at the same height as a barometric column beside it; but as the exhaustion proceeds beyond this point, the logarithmic decrement becomes smaller; in other words, the amplitude diminishes less rapidly. By plotting the observations and supposing the curve continued, it is indicated that, if a perfect vacuum were attained, the logarithmic decrement would be zero, we should have perpetual motion with constant amplitude, and, at the same time, the radiometer would cease to act.

He had tried other gases as well as air. Aqueous vapour is very unfavourable to the action of the radiometer; hydrogen, on the contrary, gave the best result of all. Prof. O. Reynolds and Mr. Schuster had published experiments which seemed to point to the true explanation of the action of the radiometer; but he thought Mr. Stoney's explanation the clearest. The molecules of the gas are beating about with the temperature; but, in tolerably dense air, they jostle one another, and their paths are short. When exhaustion is carried to a certain high point, the molecules are sufficiently few, and their paths sufficiently long for them to rebound from the glass.

Besides these two important papers, we ought to mention one by Prof. Stokes, describing and explaining a peculiarity of Newton's rings as formed

between a glass lens and a metallic surface; a communication of an extremely technical character, but embodying, at least in the opinion of Sir W. Thomson, a very notable discovery.

Among the papers on Wednesday, was one by Mr. Bottomley, describing experiments on the thermal conductivity of water. They were conducted on a plan suggested by Sir W. Thomson, which closely resembles that of Dupretz, but gives results in absolute measure. The mean result, expressed in C. G. S. units, is about '002, and is nearly identical with the conductivity of ice.

In a paper by Mr. Froude 'On the Soaring of Birds,' the opinion was expressed that whenever a bird remains at rest in the air it does so by taking advantage of an upward current produced by some obstacle which diverts the wind upwards. Sir W. Thomson mentioned, in support of this view, that, when sailing with a fresh breeze in a schooner yacht, he had recently remarked a bird, looking for things that might be thrown overboard, and remaining absolutely fixed relatively to the vessel, as far as he could judge, perhaps fifty yards or so from the mainsail, just where the wind would swerve upwards after passing the mainsail. There it remained, without the motion of a feather. It went away and came back to the same position. He noticed that other birds at a little distance off would hover for a few seconds, soaring, and then use their wings.

Prof. G. Forbes remarked that the albatross often went for a very long distance without moving its wings. The sea at the time is rough, and the bird flies along close to the waves. He had often noticed that it seemed to follow the contour of a wave very much, which is just what would be necessary to get the current of air coming up from the wave.

Space compels us to omit reference to many valuable papers. There has been no Meeting of the Association for many years at which so much good work has been done in Section A, though we must acknowledge that compression might, in many instances, have been studied with advantage. In some instances, the prefatory statement, containing things well known, was spun out to tedious length, and the new matter received so little prominence that it could scarcely be seized by the listener.

CHEMISTRY. (SECTION B.)

The Section did not meet on Saturday, the members having arranged to visit some of the great manufacturing establishments.

On Monday, the 11th, Prof. Gladstone read Dr. Atkinson's 'Report of Committee for the Purpose of Suggesting Subjects for Chemical Research.' This Committee was appointed in consequence of the hint thrown out last year in the introductory address to this Section by Mr. Vernon Harcourt, who believes that there is a great deal of energy wasted by the younger forces in this country in working without any concert with one another, and who proposed, therefore, the formation of a Committee which would charge itself with suggesting from time to time appropriate subjects for investigation. We pointed out on that occasion (*Athen.*, No. 2498, p. 341) that if the teaching of chemical science in our higher colleges were what it is, for instance, in Germany, there could be no need of any "directing" Committee, inasmuch as the heads of those colleges would direct the successive generations of young chemists into the right channels. At the same time, we expressed great doubts about the practical working of Mr. Harcourt's idea. The above-mentioned Report by Dr. Atkinson fully confirms our opinion. The Committee had sent out circulars to the principal chemists of the country, asking whether the scheme was likely to succeed. To this inquiry only eight replies had been sent, and of which four were unfavourable. Under these circumstances the Committee "have not thought it advisable to proceed further in the matter."

'The Possible Genesis of the Chemical Elements out of a Homogeneous Cosmic Gas' was the

ambitious title of a paper by Dr. M'Vicar. Setting out with a description of the thoughts of the ancient Indian and Greek philosophers as to the material element, and adverting to the growth of alchemy, the total failure of which led to the opposite extreme, that matter consisted of sixty or seventy different kinds, he went on to show that the course of modern science was converging towards the old idea, that there is but one force and one kind of matter as the source of all the beauty and variety of nature. By the use of models he endeavoured to show the possible genesis of silicon, nitrogen, carbon, and the development of marsh gas.

Prof. J. Emerson Reynolds communicated the result of his researches regarding the atomic weight of glucinum, also called beryllium. According to him, there is no doubt that the atomic weight is nearly, if not exactly, 9.2. The metal was prepared by reducing its chlorides by means of sodium.

The most important industrial process for the manufacture of soda from common salt has the serious drawback of giving rise to a large amount of a residual product, known as alkali waste, which, emitting offensive exhalations, is a nuisance in all districts where there are alkali works. Mr. Walter Weldon, the originator of the regenerative process for obtaining chlorine, read a paper on the means of suppressing the formation of this alkali-waste, in which he proposes to carry into effect Mr. Gossage's sulphide of sodium process. The process had hitherto failed, on account of the powerfully corrosive action of sulphide of sodium upon the material of the furnaces in which the various mixtures of salt-cake and coal or coke are heated. Another cause of non-success has lain in the methods which have been employed in communicating the heat necessary to enable the reaction of coal or coke upon sulphate of soda to take place. For the practical realization of the process, one must be able to employ, for the reaction of carbonaceous matter upon sodic sulphate, a vessel or furnace impregnable to sodic sulphide, and also secure that neither air nor products of combustion shall have access to the interior of that vessel while the reaction is going on. The first-mentioned object can be perfectly accomplished by lining the vessels or furnaces with carbon. Mr. Henderson, of Glasgow, the creator of the great new industry of extracting copper by the wet way from burnt pyrites, had already used carbon bricks for the beds of furnaces, for the manufacture of ferro-manganese. For the purpose under consideration, bricks of agglomerated coke, made more or less after Mr. Henderson's manner, left nothing to be desired. The second object could be accomplished by heating the sulphate of soda and the carbonaceous matter separately, the one in one furnace, and the other in another, and then bringing them into contact only after they have been separately raised to such temperatures as shall permit, on their own being mixed together, of reaction between them taking place without any further application of heat. By means of diagrams, Mr. Weldon showed the methods he proposed on a larger scale than that on which he had hitherto tried them, viz., a Siemens furnace, for heating sulphate of soda at least to fusion, and a revolving furnace, lined with carbon, in which first to heat powdered coke to incandescence, and then to effect its reaction upon the fused sulphate of soda. He described at some length the processes he proposed for converting salt-cake into soda-ash and free sulphur without production of any residual product. The quantity of salt-cake employed in the manufacture of glass is enormous, and more than 40 per cent. of its weight goes into the atmosphere as sulphurous acid. It is to be hoped that sulphate of soda will no longer be directly employed in the glass manufacture, but that silicate of soda will be obtained by first producing sulphide of sodium as has been described, adding silica thereto, and then treating the mixture in the same furnace in which the sulphide was produced by a blast of super-heated steam from the Cowper-Siemens stove. Sodic sulphide could in this way be converted

into silicate with extreme facility, with simultaneous production of sulphuretted hydrogen, from which sulphur could be recovered by any of the known methods.

A new voltaic battery, by D. G. Fitzgerald, was described by Mr. Biggs. In one of its forms it is a cylindrical glazed earthenware jar, varying in size with the usages for which it is intended. The positive pole consists of a number of carbon plates, from $\frac{1}{2}$ inch to 1 inch in width, fixed in an iron ring by means of an alloy of lead and antimony. In the centre of the jar is an unglazed earthenware diaphragm, which contains a piece of zinc forming the negative pole. The form, however, adopted for ordinary purposes is rectangular in shape, and the cell is divided into two liquid-tight compartments by means of a perforated carbon plate, which forms the positive pole. The perforations in the plate are filled with porous earthenware plugs; the positive pole is a piece of zinc in one of the compartments. The battery is charged by filling the zinc compartment with dilute sulphuric acid (1 to 10), and the other compartment with a good oxidizing agent. The best oxidiser is calcic dihydrochromate, with sufficient sulphuric acid to combine with the oxide of calcium, and the sesquioxide of chromium liberated when the calcic salt is deoxidized. This is easily prepared by mixing chromate of lime with sulphuric acid in the proportion of 5½ oz. of the lime and 4½ fluid oz. of sulphuric acid. The great advantage of the use of this battery is that the sulphates formed are not crystallizable, and no deleterious gas—in fact, no gas whatever—is evolved. The current is intense, inasmuch as the only internal resistance to the primary current is the liquid resistance, the porous plugs being used only in the secondary current for depolarization. This depolarizing current is peculiar to the battery, and does not interfere with the primary current. It may be explained thus: the action of the sulphuric acid on the zinc liberates hydrogen on the carbon plate, causing a difference of potential to exist on the opposite sides of the plate; a current immediately commences, and the hydrogen is oxidized. This current increases in proportion to the hydrogen liberated, so that polarization is effectively removed. The result, according to the author, is a good constant battery.

Prof. Guthrie's note, 'On Solid Water,' was a description of what he formerly called "cryohydrates," aqueous solutions of various salts of such strength that, when reduced to certain definite temperatures—all below 0° C.—the salt and the water solidify together. Surely there is nothing new in the fact of water becoming solid by associating with various compounds in their crystallization? But, of course, a scientific man cannot go before the public at the British Association, and not be sensational.

Of other papers read this day, we mention 'The Atomicity of Oxygen and the Constitution of Basic Salts,' by G. J. Stoney; 'New Anthracene Compounds,' by W. H. Perkin; 'Alkaloids of the Aconites,' by C. R. A. Wright; and 'Report on Specific Volumes of Liquids,' by T. E. Thorpe.

The papers read on Tuesday were remarkable for the diversity of their contents. Deserving of quite special attention is Mr. Dixon's paper, 'On an Apparatus for the Analysis of Impurities in the Atmosphere.' The instrument takes in the air by means of a pair of air-pumps, the piston-rods of which are connected with a beam, to either end of which the working handle can be attached. The working of the pumps is easy, and an elderly steady man is able to produce a regular flow of air through the absorbing vessels at the rate of sixty cubic feet per hour, though double that could be produced. The air-pumps are connected directly with a reservoir of the capacity of about eight cubic feet, and this reservoir again communicates with the atmosphere by six comparatively small tubes. The function of the reservoir is to secure a steady flow in the direction of the pumps, notwithstanding their necessarily intermittent action. The air thus set in motion in several distinct streams towards the pumps is, before it reaches the reservoir, first freed from the impurities by wash-

ing, and then measured as it passes through dry gas-meters, a set of washing-bottles and a gas-meter being provided to make the streams of air distinct from each other; hence, in the machine shown, there were six sets of absorbing vessels and six gas-meters. Generally, three absorbing vessels suffice. Mr. Dixon gave some further details as to tubes, stopcocks, and slits, and dwelt especially on the subject of the glass tubes passing to the bottom of the absorbing vessels and delivering air into the liquid, to the extraordinary efficiency of which the whole absorbing apparatus was due. During the last month the machine had worked very satisfactorily, and given results as to the presumably pure air at the Mull of Kintyre, which would be of great interest when taken in connexion with the examination of the air that is to be met with in Glasgow. He had not made full analyses, but found that the amounts of ozone and ammonia were remarkably constant when the weather was dull and a fresh breeze blowing, while warm weather and light winds more than doubled the amount of ammonia prevailing at other times; and, when the amount of ammonia was exceptionally high, that of ozone was exceptionally low. Twelve hours were spent daily in drawing less than 100 cubic feet of air through the liquids respectively employed for the absorption of these substances. On an average of sixteen days, only a fiftieth part of a milligramme of nitrogen existed as ammonia in 100 cubic feet of air, while the average amount of ozone existing at the same time in the same quantity of air was less than one-twentieth of a milligramme. The average amount of ammonia in the Kintyre air is little more than a thousandth of that given by the late Dr. Dundas Thomson for the air in the central district of Glasgow during a certain period of 1848. It was found, as a result of a nine-days' estimate, that 126 cubic feet of air drawn from the outside of the College laboratory contained '31 grains of ammonia, though at the time a dull mist pervaded the city, the air was stagnant, and cholera was raging in the vicinity. The machine was also adapted to the estimation of noxious vapours of all kinds in the air, and for vapours in chimneys, flues, drains, &c. It was, of course, no essential part of a machine that provision should be made in it for the simultaneous estimation of six different substances, and it is, indeed, very probable that during the investigation of air in Glasgow the present machine may be employed for the detailed examination of special points in the city, while one of smaller dimensions and fitted for the simultaneous estimation of only two or three impurities is sufficient for determining the general character of districts. Mr. Dixon added an account of the method he employed for the estimation of ozone. The process was based on the fact that when ozone is absorbed by a solution of iodine of potassium, the first effect is to liberate iodine and to form caustic potash, and his method was the detection of free iodine by means of starch, the speciality of the method consisting in the means employed to counteract the volatility of the iodine, for which the iodide of potassium solution is mixed with a known volume of a standard solution of pure arsenite of potash or soda. The new method, which is really quantitative, while all the other methods are qualitative, marked a new departure in the history of air-analysis. The practical value of air-analysis in connexion with many sanitary questions is generally felt, and Mr. Dixon shares the common opinion that the condition of air as regards healthfulness is evidenced in an important degree by the percentage of ozone in it.

Mr. Dixon, in following the commonly received opinion about the beneficial influence of ozone upon the human constitution (an opinion which, by the way, was unhesitatingly supported by Dr. Andrews in his presidential address), is evidently not aware of certain statements in some of the early numbers of this year's *Comptes Rendus*, where ozone is described as being anything but beneficial. We cannot, of course, vouch for the correctness of those statements, but we expect to see them noticed in a paper on Ozone, either approvingly, if they are

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right, or disapprovingly, if not. We have also great doubts regarding the sufficiency of potassic iodide for the identification of ozone. There are, besides ozone, other substances which liberate the iodine, for instance, those oxygen compounds of nitrogen which are obtained when atmospheric air is passed over the flame of a Bunsen gas-burner.

Mr. Newlands gave a lengthy description of refining sugar by the alum process. In the manufacture of sugar from various sources, particularly from beet-root, syrups are formed containing large quantities of potash salts, the presence of which prevents the separation of a considerable portion of the sugar by the usual process of crystallization. He submitted analyses of beet syrup before any sugar had been separated therefrom, and of French beet molasses after all the sugar which could be separated by the usual methods had been removed. The removal of the alkaline salts from saccharine solutions was of the utmost importance, and the potash may be eliminated at once, and in the simplest possible manner, by the "alum process," which consists of two parts,—1st, precipitation of the potash in the form of alum; and, 2nd, neutralization of the residual acid liquor, by means of lime. The precipitation is accomplished by adding to the cold syrup solution of sulphate of alumina in quantity sufficient to form an alum with the whole of the potash present. If the density of the syrup be much over 38 deg. B., the alum cannot easily settle out. The mixture is allowed to repose for about an hour, and the whole allowed to repose for four or five hours, until the deposit of "alum meal" has completely subsided. The tank is provided with mechanical stirring gear. The three principal points to be attended to here are, 1st, to work at the lowest attainable temperature; 2nd, to employ solutions as dense as possible; and, 3rd, to perform the whole operation as quickly as possible. For the neutralization method, the alum tank is provided with several taps at different heights, and when the alum has well settled down, the clear acid liquor is run off, by means of these taps, into another tank, placed on a lower level, and also provided with mechanical stirring-gear, called the "liming tank." As soon as the acid liquor has thus been decanted into the liming tank, milk of lime is added at frequent intervals, until the neutralization is nearly complete. The point at which the neutralization is practically complete may be known by two simple observations,—1, the absence of any taste of aluminous compounds; 2, the liquor should give only a dull red tinge to blue litmus paper. When the neutralization is thus practically complete, the treated liquor is subjected to the same routine as the ordinary solutions of sugar in a refinery. To wash and dry the precipitated alum, it is convenient to employ a small centrifugal machine. If made from house syrup, the alum meal is quite white and sufficiently pure to be sold directly after merely twice machining, a little water being added in the operation. If made from a very impure syrup, the alum is rather yellow, and requires to be once or twice re-crystallized, when it remains in a state of purity.

The Local Committee of the British Association had thought it advisable to arrange to have a series of papers on the local industries,—'On Soda,' by Mr. J. Maclear; 'On Iodine,' by Mr. E. C. C. Stanford; 'On Sugar,' by Mr. T. L. Patterson; and 'On Firebricks,' by Mr. J. Dunnachie. As these were descriptions of great extent, and the number of papers announced for the day was somewhat considerable, a sub-section was formed, which adjourned to another room for the purpose of hearing these papers read, among which were 'The Influence of Condition and Quantity of the Negative Element on the Action of the Copper-zinc Couple,' by Prof. Gladstone; 'The Critical Point of Liquid Carbonic Acid in Minerals,' by Mr. W. N. Hartley; 'The Action of Hydriodic Acid on Mixed Ethers,' by Mr. R. D. Silva; and 'Ammoniac Seleniocyanide,' by Dr. Cameron.

On Wednesday, the last day of this year's meeting, the sewage question came once more to the front. Col. Hope, the former tenant of the Rumford Experimental Farm, read a paper, 'On the

Purification of the Clyde,' which advocated the removal of the sewage of the city to some neighbouring sandy fields, where it would be filtered through the soil. Col. Hope, after sixteen years' experience, was still an ardent advocate of the purification of sewage by its application direct to land. The peculiar feature of this latest scheme of Col. Hope was the laying down of a double system of sewers, the one intended for the sewage, &c., coming from the houses, the other solely for draining the clean rain-water off.

Another paper, 'On the Utilization of Sewage,' by Mr. W. C. Sillar, was taken as read.

The discussion that followed Col. Hope's paper was as little satisfactory as that on the previous Friday. There were not two speakers agreeing in their views as to the way of dealing with the sewage of our great cities; every individual critic seemed to have a plan of his own. Would it not have been advisable for the Sewage Committee of the British Association to express, before it expired, in a condensed form, its views on the true state of this question?

Among the other papers read, those of Prof. Dewar, 'On the Transformation of Chinoline into Aniline,' and of Dr. Tilden, 'On the Nitroso Derivatives of the Terpenes,' were of some theoretical interest.

The scientific standard of the papers brought this year before the Chemical Section is a very fair one. True, there were no startling discoveries, either theoretical or practical, announced; but neither was there an exhibition of nonsense and foolishness, such as appeared occasionally at some former meetings: folly and nonsense were monopolized this time by the Anthropological Section.

GEOLOGY.

(SECTION C.)

THE most attractive paper, read in this Section, was that by the Duke of Argyll, 'On the Structure of the Highlands.' The room was crowded, and the discussion was well sustained. The Duke of Argyll has on previous occasions set forth his views before the Geological Society; and it was expected that on this occasion there would have been a sharp fight between the author and the younger school of Scottish geologists, of whom Prof. A. Geikie may be regarded as the chief. But in this respect expectation was disappointed; for, although there were many points raised in the paper, upon which opinion is somewhat divided, yet, as regards the main points, there was no great dispute. The author gave a vivid description of the physical geography of the Highlands, drawing special attention to the deep lochs which indent the land, and to the long chains of islands which guard it. The varying geological structure of the country was pointed out, and the relation of this structure to the shape of the ground was discussed.

The Duke of Argyll made a protest against the recent development of extreme views amongst students of glacial geology. He maintained that it is unnecessary to assume the existence of a vast ice-cap extending over the whole of the northern hemisphere, filling up the beds of the North Atlantic and the neighbouring seas. He looked mainly to marine agency—the drifting of ice—to explain the wide distribution of boulders. He described those of Argyllshire, and referred also to some beautiful examples of raised beaches which occur on the coast of Jura. The main points of this interesting paper were summed up in a series of propositions, which we here transcribe:—"It would, I think, be affectation to pretend that our science enables us to follow with anything like distinctness of conception the exact nature and sequence of operations which, through such a vast lapse of time, have brought about the final result. But I believe in something like the following outline of events.—1. That subsequent not only to the consolidation, but probably also to the metamorphism, of the Lower Silurian deposits, the whole area of the Western and Central Highlands became an area of that kind of disturbance which arose from lateral pressure due to secular cooling

and consequent contraction and subsidence of the crust of the earth. 2. That the crumpling, contortion, and tilting of the Silurian beds which we now see arose from that disturbance. 3. That then were determined those great general lines of strike, running from south-east to north-west, which are to this day a prominent feature in the physical geography of the country. 4. That during that period of disturbance, and as part of the movement which then took place, the disturbed rocks fell inwards upon materials at a great heat, which rose in a pasty state along lines of least resistance, and thus came to occupy various positions—sometimes intercalated among the sedimentary beds. 5. That to this period and to this method of protrusion we owe some at least of the masses of granite material which are abundant in the Highlands, in particular that to this period belongs the porphyritic granites on the north shores of Loch Fyne. 6. That during the later ages of the Palaeozoic period volcanic action broke out at various points, accompanied by great displacement and dislocation of strata; and that to this, with the denudation which followed, we owe much of the peculiar scenery of the south-western coasts, especially in the district of Lorne in Argyllshire. 7. That we have no proof that the Central Highlands were ever under the seas which laid down the deposits of the later Palaeozoic age. 8. That such evidence as we have points rather to the conclusion that they were not under such seas, since such fragments as remain of the Old Red and of the Carboniferous rocks appear to have been deposited round the bases and in the marginal hollows of the Silurian hills. 9. That in like manner we have no evidence that the great mass of the Central or Western Highlands were ever under the seas of the secondary ages, which, on the contrary, appear to have deposited their sediment upon an area outside of, but probably surrounding, the area of these central Highlands, and certainly upon those north-eastern and western flanks. 10. That the whole area of the Inner Hebrides, and of the water dividing them, together with some portion of the mainland, as in Morven, was an area occupied by Secondary rocks. 11. That in the Tertiary ages, probably in the Eocene, and certainly in the Miocene, these rocks formed the basis of a great land of unknown extent, very probably extending to a great distance both to the east and west of the present coasts of Scotland, and embracing the north of Ireland. 12. That this country became in the Miocene age, and possibly earlier, the scene of great volcanic outbursts, which covered it with vast sheets of lava, and broke up its rocks with every form of intrusive plutonic matter. 13. That later, in the Tertiary periods, and perhaps as late as the Pleiocene, this volcanic country was itself broken up by immense subsidences and upheavals, giving both occasion and direction to the agencies of denudation and to enormous removal of material. 14. That this Tertiary country had been thus broken up and nothing but its fragments left when the Glacial epoch began, and that the main outlines of the country, as we now see it, had been already determined when glacial conditions were established. 15. That thus the work of the glacial period has been simply to degrade and denude pre-existing hills, and to deepen pre-existing valleys. 16. That during the glacial epoch there was a subsidence of land to the depth of at least 2,000 feet above the level of the present sea, and again a re-elevation of the land to the present level. 17. That this re-elevation has not restored the land to the level it stood at before the subsidence began, but has stopped greatly short of it, and that the deep arms of the sea or lochs which intersect the country, and some of the deeper freshwater lakes (such as Loch Lomond), are the valleys still submerged, which at the glacial epoch were high above the sea and furrowed the flanks of loftier mountains. That during the glacial period the work of denudation and degradation was done, and done only, by ice in the three well-known forms:—1st, of true glaciers descending mountain slopes; 2nd, of icebergs detached from the termination of the glaciers where they reached the sea; and 3rd, by

floe or surface ice, driven by currents which were determined in direction by the changing contours of the land during the process of submersion and and re-elevation."

Dr. J. Bryce each year gives a Report to the Section, 'Upon the Earthquakes in Scotland.' Fortunately perhaps for Scotland these Reports are usually uninteresting. Earthquakes are either conspicuous by their absence or are exceedingly slight. It is well, however, to know that the instruments are in good order, and that all arrangements are made to extract some useful knowledge out of any disturbances which may, in future, arise. Dr. Bryce, in addition to his formal Report, gave a general account of the distribution of Scottish earthquakes. Comrie, the place most famous for them, is on the line of the great fault which divides the Highlands from the Lowlands. Another district in which earthquakes occur is the great Caledonian Valley.

The parallel roads of Glen Roy were described in papers by Dr. Milne-Home and Mr. J. Macfadzean. This is an old subject, and it has often been discussed by geologists and others. Dr. Milne-Home criticized a recent lecture by Prof. Tyndall, in which the agency of ice, damming up the outlets of lakes, was adopted to explain the terraces. Dr. Milne-Home contended that the lakes had been blocked by detrital matter.

Another paper by Dr. Milne-Home referred to terraces in the Carron Valley, near Linlithgow. The upper terraces occur at heights of 140 to 150 feet above the sea to the west of Falkirk, but they slope seawards or towards the east, so that near Grangemouth they are only fifty or sixty feet above the sea. These terraces the author believed to be marine, although no marine fossils have yet been found there. A lower set of terraces, thirty or thirty-five feet above the river, are believed to be of river origin, and to represent the ancient courses of the river. Traces of an old sea-beach, at a similar height, occur along the shores of the Frith of Forth.

Yet another paper 'On Terraces' was contributed by Messrs. R. Russell and T. V. Holmes, of the Geological Survey, but this referred to raised beaches on the Cumberland coast, between Whitehaven and Bowness. The beach occupies flat ground, which stretches inland; sometimes it ends against an old cliff; sometimes, as at Selloch, it ends against a lower flat, four or five feet below the level of the old beach. The beach is traversed by parallel ridges of sand and gravel, resembling those thrown up on the modern beach at various tides. The greatest elevation of the old shingle-ridges is forty feet above mean sea-level. The authors believed that there had been no elevation of this district since Roman times.

A paper 'On the Geology of Foula, Shetland,' was read by Mr. G. A. Gibson, which was specially remarkable for the skill with which the author described the relations between the structure and scenery of the island. The eastern part of the island is composed of metamorphosed schists, which are faulted against lower Old Red Sandstone on the west. The schists weather into low and rugged cliffs and hills; but the sandstone stand out in bold escarpments, facing the north and east, the dip being to the S.S.W. The thickness of sandstones and flags here exposed is estimated to exceed 6,000 feet.

An important paper was read by Prof. Hull, 'On the Classification of the Carboniferous Rocks of the British Isles.' He proposed to range them in three divisions. Between the middle and lower Coal Measures (or Gannister beds) there is a paleontological break. There are about fifty-three marine species in the latter, but only four or five in the former. The middle and upper Coal Measures the author classed as Upper Carboniferous; the series from the Gannister to the Yoredales inclusive he called Middle Carboniferous; all below the Yoredales are Lower Carboniferous. Prof. Hull also gave an account of a deep boring at Searle, in Lincolnshire. The boring began in lower lias; it traversed the Rhaetic beds, Keuper marls and sandstones, Bunter sandstone, and Permian beds.

At the depth of 1,900 feet the boring is supposed to have entered the Carboniferous beds. It is now 2,030 feet deep. Strong springs of water were met with at 917 and 1,250 feet.

Mr. G. A. Lebour also read a paper 'On the Classification of the Carboniferous Rocks.' Although chiefly concerned with the lower beds, his object was to show that only two natural divisions could be made in the series. The upper one includes all down to the base of the Millstone Grit; the lower one, all below that. The Tuedian or Calciferous Sandstone series appear, in Northumberland, to change laterally into the ordinary Carboniferous Limestone series.

Some comparative sections of the coal basins in West Lancashire were shown and described by Mr. C. E. De Rance.

The Sub-Wealden Exploration was, of course, before the Section as usual. Mr. Willett stated that, in his opinion, the boring should be now abandoned. Major Beaumont, on the other hand, advocated its continuance. The general opinion seemed to be that, since the hole is now down so deep—nearly 2,000 feet—it would be as well to go on with it, if possible. This, it is hoped, may be done. A committee has been re-appointed, and a grant from the Association has been given.

Mr. Pengelly's Report on Kent's Cavern contained no new points of importance. The cavern has been so thoroughly explored, under Mr. Pengelly's superintendence, that fresh results can hardly be expected each year. Many bones and flints have been found during the past year, and the work fully confirms the conclusions arrived at and detailed in previous Reports.

Mr. Tiddeman, in his Report on the Victoria Cave, announced that a second and older layer of laminated clay had been found, separated by stalagmite from the cave-earth; still lower is another layer of stalagmite, lying on a brown clay with an eroded surface. Not many animals have been discovered during the past year. It is important that the succession of deposits now made known should be well studied, and we are glad to find that the Association has continued the grant in aid of this exploration.

The Rev. H. W. Crosskey's Report of the Boulder Committee gave details as to the amount of information collected during the past year. The positions of boulders are being noted, and means are taken to prevent the destruction of those which have any special interest. These Reports will, in time, be of great value, and we think that the author is wise in at present contenting himself with collecting facts, reserving theories and generalizations for the future.

Mr. R. L. Jack described the basaltic dykes which traverse the south of Scotland. They appear to radiate from a point somewhere about the peninsula between Loch Ridd and Loch Strivan; but there is no trace of unusual volcanic activity there. Most of these dykes are of Miocene age. Mr. Traill followed with an account of the trap dykes of North Mayo, some of which he showed to be pre-Carboniferous.

Mr. De Rance's second Report 'On Underground Waters of the New Red and Permian Formations' contained an immense deal of detail which will be published in the *Transactions*. The information thus collected and carefully tabulated will be of great value.

We referred last week to Prof. Young's remarks on recent theories respecting the limitation of the age of the earth. The chief arguments are derived from a consideration of the cooling of the earth and the age of the sun. A third argument depends on the retarding action of the tides on the earth's rotation. Sir W. Thomson believes that if the earth had been rotating several hundred millions of years ago the velocity would have been very great, and the bulging at the equator much greater than we know it to be. Dr. Croll read a paper on this question, showing that, although the sea level may be lessening at the equator, in consequence of retarded rotation, and therefore of lessened centrifugal force, yet subaerial denudation is also lessening the land there, at the rate of

about one foot in 2,300 years, or as rapidly as the sea level sinks. Consequently we cannot infer from the present form of our globe what was its form when it solidified. In so far as the tidal retardation can show to the contrary, its form may have been as oblate as that of Jupiter when solidification took place. But another circumstance must be taken into account. The lowering of the equator by the transference of materials from the equator to higher latitudes must tend to increase the rate of rotation; or, more properly, it must tend to lessen the rate of tidal retardation.

Prof. Herschel and Mr. Lebour have continued, with success, their researches upon the conductivity for heat of certain rocks. When these experiments are completed and finally tabulated we shall be in possession of much valuable information.

Mr. J. E. Taylor gave an account of the phosphate deposits in the south of France, which occur in irregular caverns and pockets in the oolitic limestone. Numerous bones and teeth occur in a sort of cave earth, the whole being cemented and enclosed by phosphate of lime.

Prof. Harkness and Nicholson gave a paper 'On the Rocks of the Lake District which lie between the Volcanic Series (or Borrowdale rocks) and the Conistone Flags, noting their equivalents in Wales and elsewhere.

Prof. W. C. Williamson re-stated his views regarding the structure and affinities of some coal measure plants. Perhaps this is a subject not remarkably interesting to most of the audience at Section C.; but the speaker's humour and enthusiasm made even a dry subject pleasant. If paleontologists, from defective knowledge, have classed in widely different genera plants which should be united, it is very important that such errors should be rectified. In Prof. Williamson's opinion such errors have been made, and he produced evidence to show that *Lepidodendron* and *Sigillaria* are closely allied, both being true cryptograms of arborescent magnitude. *Calamodendron* is the mature form of *Calamites*. *Asterophyllites* and *Sphenophyllum* were long supposed to be the foliage of *Calamites*: this the author disputed, although he believed the two genera of ferns to be almost identical. All these conclusions, on the one hand, materially reduce the number of carboniferous-plant types with which the geological biologist has to deal; but, on the other hand, they acquire an important significance in relation to evolution. Though they do not as yet give any real evidence sustaining the Darwinian hypothesis, they certainly exhibit a remarkable graduated development of forms, which may some day prove to afford important support to that widely accepted doctrine.

The Glasgow meeting was notable for the number of distinguished foreigners who were present. Section C. was fortunate in having communications from three of them, each of whom addressed the meeting in excellent English. Dr. A. Fritsch gave an account of the Labyrinthodonts and insects from the Upper Carboniferous (Gas Coal) of Bohemia. The plants of these beds are closely allied in character to those of the Coal Measures, but the animals appear to be of Permian types. The Labyrinthodonts varied from one inch to five feet in length; specimens of the former sites being found completely ossified.

Dr. Ferd. Roemer mentioned the discovery of Carboniferous Limestone in Lermatira; it contains fossils which characterize that formation in western Europe. Dr. Von Lasaulx described, under the name of Melanophlogite, a new mineral from Sicily, occurring on crystal of sulphur and celestine; it contains 86 per cent. of silica, 7 of what is probably sulphuric acid, 3 of water, and small quantities of iron and strontium. He also exhibited specimens of garnets which showed double refraction.

Mr. J. Young gave an interesting account of the silicious spicules of sponges from the Carboniferous Limestone of Ayrshire. Prof. J. Thomson referred again to the prismatic structure of basalt, and also explained the ridgy structure of coal.

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Amongst the brief papers of some little interest, we may note that of Mr. E. A. Wunsch 'On the Junction of the Granite and Old Red Sandstone on the east side of Arran.' It has generally been supposed that these formations are always separated in Arran by a band of slate, but Mr. Wunsch showed that in one district this is not the case. In Prof. Geikie's new map of Scotland, which was issued during the meeting, the junction is shown as Mr. Wunsch described it. It is to be regretted that this map was published too late to be of much service in the Section; many points discussed during the meeting could have been more readily understood if it had been at hand. Prof. Geikie has here given an abstract of the work of the Geological Survey, so far as this has yet gone: for other districts he has relied on the published maps of Murchison and numerous other geologists. But he has mainly drawn on unpublished work of his own, there being few districts of Scotland with which he is not more or less familiar. No notice of this map will appear in the official records of the Glasgow meeting, since it was not formally brought before the Section; but its publication will be one of the most important results of that meeting, and it will, perhaps, be the one which will have the most lasting value.

ANATOMY AND PHYSIOLOGY. (SECTION D.)

DR. M'KENDRICK'S Address in anatomy and physiology dealt, to a considerable extent, with the scientific and social relations of those sciences. Anatomy, he said, was the science of organic form—physiology that of organic function: one was the complement of the other. The former was not merely the basis, or preparation, for the other, but had a rôle of its own not inferior to that of physiology. The investigation of minute structure, or histology, was a necessity in both; but it had become so enormously developed of late years that separate chairs had been established for it in Germany, and they must, sooner or later, be founded in this country. Physiology Dr. M'Kendrick considered to be the most difficult science to prosecute. Each animal was a machine, the intricacies of which were infinitely more involved than any human manufacture. To stop this machine, in the attempt to discover the action of one of its parts, was a proceeding which, in many instances, interfered with the action of the very part they desired to investigate. Much of the minute anatomy of the human body and of other animals remained unknown, and this was especially true of the structure of the nervous centres. Yet he thought that physiology in the future would depend less on aid of this nature than on facts obtained by methods of pathological investigation and experiment.

A comment on the recent agitation respecting vivisection was introduced, recognizing the right of the public to take action if it was considered that unnecessary cruelty was perpetrated. An Act having been passed, it became the duty of physiologists, as good citizens, to give it a fair trial. Personally, Dr. M'Kendrick had been opposed to legislation as unnecessary; he appealed to the opponents of vivisection to desist from further action. But, if such agitation were continued, he had no fear that the public would not listen to reason when sufficiently informed upon the matter. He looked with great satisfaction at the general diffusion of biological knowledge for its undoubted practical benefits, the intellectual training which is afforded, and the probable increase of kindness towards every living thing. In the course of one or two generations, many social questions would be viewed more from the physiological standpoint than at present; the sick would be nursed more rationally; legislation would be prompted, not by emotional agitations, but by enlightened views of the physical nature of man. The antiseptic treatment of wounds, originated by Prof. Lister, of Edinburgh, and now winning its way in many countries, was alluded to as an example of the practical aspect of physiology. An entirely physiological investigation had given the key to a method by which many serious operations might be per-

formed with comparative safety, pyæmia, or surgical fever, might be banished, much pain would be relieved, and many lives saved.

Dr. M'Kendrick looked for many triumphs for practical medicine in the future as the result of work done by men specially devoted to the physiological laboratory. The origin and progress of those diseased processes called cancer, tubercle, rheumatism, and gout, the discovery of fever-poisons and their antidotes, were stupendous subjects of inquiry, requiring the efforts of many specialists, and more money and apparatus than private enterprise could supply. It was as fitting a work for Government to undertake as the Challenger and Arctic expeditions.

The concluding portion of the Address was devoted to physiological psychology, which was now being diligently cultivated by numerous workers, attempting to supply from the objective side an explanation of the simpler mental phenomena. Many were afraid of the tendency to represent the mental fact as a physical fact, and were contented with the study of subjective phenomena. But why should not both aspects of the question be carefully looked at? Much information was required on the structure of brains; we had no knowledge of structure sufficient to distinguish microscopically the brain of a man, of a monkey, and of a sheep. The intricate working of many kinds of brains might receive explanation from a knowledge of their structure. No one who had kept an aviary of small birds could have failed to notice marked differences of character among different members of the same genus or even the same species. One manifested cunning, another combativeness, a third kindness to smaller brethren, a fourth bullied the rest, a fifth might occasionally give way to uncontrollable rage. The question still unsolved was whether these peculiarities had any basis in structure; this structure must be exhaustively examined. Another avenue for psychical research was through the action of the senses, inquiring how the stimulus was received and propagated, and how it influenced consciousness and action. Dr. M'Kendrick remarked that it would save not a little heartburning if we remembered that it was not probable that we had yet arrived at the final solution of problems which had puzzled the wise men of earlier times. Many hypotheses now in favour might turn out inadequate; but they would do good service as stepping-stones to more rational conceptions. But research must go on fearlessly and with enthusiasm, so that knowledge might be transmitted to posterity not only less burdened with error, but with many additions of truth.

Mr. G. J. Romanes, whose remarkable investigations into the physiology of the nervous system of the Medusæ, or jelly-fishes, excited so much interest last winter, gave an account of his methods of experimentation, and, in describing his results, confined himself chiefly to those which he had obtained this summer by the use of the complicated electrical and mechanical apparatus now used in investigating nervous and muscular phenomena in the higher animals. These results, which will have an important bearing on physiological theory, will be shortly presented to the Royal Society. The muscular sheet which lines the interior of the swimming-bell of the jelly-fish has been shown to possess a power of rhythmic contraction when detached from the nervous centres in the margin of the bell; and this contraction presented essentially the same phenomena as that of the heart. When induction shocks were rapidly communicated the rhythmic response was immediately set up, and continued for several hours. Strong indications of a co-ordination of nerve-centres were observed, and it is an interesting question whether, although no definite nerve-fibres can be found throughout the muscular sheet, there may not be a commencing differentiation of tissue, along which the impulse passes readily, constituting "lines of discharge." Striking evidence of the existence of true reflex action has been obtained in these simple animals. When the margin of the swimming-bell was cut off, the "polypite," or alimentary portion hanging

down from its interior, has been observed to elongate gradually to five or six times its ordinary length. The action of poisons which affect specially the nervous systems of higher animals is precisely similar upon the nervous centres and the muscle-sheet of jelly-fishes.

Prof. Haeckel, of Jena, gave a very interesting address, illustrated by blackboard drawings, on some of the lowest forms of sponges, or rather animals so simple that it was scarcely certain that they could be included among sponges, and yet they were unmistakably not Protozoa. They have two layers of cells of distinct characters, and a mouth, but their body-wall is not perforated by pores, as in all sponges. Their development precisely follows the type sketched out by Prof. Haeckel in his celebrated Gastræa theory. These animals were taken as the simplest forms of Metazoa, or animals with a body-cavity; and he believed that from forms having a similar simple structure were developed, on the one hand, the Coelenterata (polyps, corals, and jelly-fishes) and Echinodermata (starfishes, sea-urchins, &c.), and on the other the great group of Vermes, by modifications of which both the remaining invertebrates and all the vertebrates arose. Dr. Allen Thomson, in the discussion which followed, remarked that Prof. Haeckel was regarded in many quarters with the same suspicion as Mr. Darwin had been many years ago, as a rash speculator; but those who heard him that day would entertain a very different view, and perceive how large a share observation and experience had in the theories which he put forward.

The Report of the Committee on Intestinal Secretion and Movement stated that, in continuation of their previous investigations, it had been found that the application of various potash and soda-salts to the intestinal mucous membrane produced a more or less profuse secretion, which was most abundant when sulphate of magnesia, acetate of potash, sulphate of soda, and tartrate of potash and soda were made use of. Other portions of the Committee's Report went to establish the actions of the various nervous centres on intestinal secretion and movement. The splanchnic nerves appear to be those which affect the calibre of the blood-vessels, while secretion is presided over by local ganglia of the sympathetic system.

Prof. Burdon-Sanderson described a further series of researches on the electrical phenomena exhibited by *Dionæa muscipula* (the fly-trap). He finds that, when excited, there is an electrical change throughout the entire leaf, all of it becoming more negative than it was before. The greatest change is on the external surface, immediately opposite to the three sensitive hairs. No relation is found to exist between the electrical conditions before excitation, and those produced by the action of a stimulus. In certain points the renewed investigation bears out the view that there is an analogy between the electrical phenomena of *Dionæa* and those exhibited by ordinary muscle and nerve.

Mr. C. T. Kingzett's researches 'On the Action of Alcohol on the Brain' attracted much attention. He has experimented by keeping the brains of oxen in water at the temperature of the body, and in water and alcohol. The extracts thus obtained have been carefully analyzed. It appeared that alcohol had no more chemical effect on the brain than water itself, so long as its proportion did not exceed a certain percentage. But with a larger proportion alcohol dissolved a considerable part of the brain-tissue, including most important constituents. Many difficulties surrounded the attempt to follow these experimental results into actual life, and to comprehend in what way the modes of action of water and alcohol on the brain might be influenced by the other matters present in blood. But it was difficult to see how any of the matters known to exist in the blood could prevent alcohol, if present in sufficient amount, from either hardening the brain (as it did after death) or dissolving portions of its constituents, and this necessitated the production of disease. Dr. M'Kendrick, in commenting on the

subject, said it was well known that alcohol had a distinctive effect upon the connective tissue, which was found remarkably hypertrophied in the brains of drunkards. The nature and functions of brain-tissue became slowly altered by the continual administration of small quantities of a substance; and there was a physical demand for the renewal of this altered structure. Consequently, in dealing with a drunkard, they had not merely to effect a moral reformation, but also to endeavour to produce a change in his physical organization. Prof. Burdon-Sanderson said that the question ought certainly to be taken up by Government, and the best men in the country should be engaged on the inquiry, at the national expense. There was nothing more important for the welfare of the community and for the diminution of human suffering.

Surgeon-Major Johnston read a paper 'On the Diet of the Natives of India,' in which he showed that they required more nitrogen and carbon than Europeans, and took much more salt, owing to the small quantity of this constituent contained in lentils and other important foods, which largely constituted their diet. The natives took more dry food than Europeans, and those who lived on food from the tables of the Europeans enjoyed a much greater immunity from cholera than the rest of the population. A considerable discussion arose on the general question of diet, in which opinions were expressed that the people of this country might live on a much more economical diet, with less meat, than at present. Prof. Redfern enlarged on the imperfect supply of truly nutritious food that the operative class was fed upon, chiefly through ignorance of the qualities of food and how to cook it. He spoke strongly of the deleterious effects produced by girls and young women who were working from early morning until night, taking only tea and bread-and-butter three times a day, and stimulating their energies by whiskey.

Prof. Wanklyn read a paper 'On the Effects of the Mineral Substances in Drinking Water on the Health of the Community.' He said one of the questions which had often been asked was, Whether is it better to drink hard water or soft water? The reply which has been given is that at present we cannot tell, but that apparently the system can accommodate itself to either, and that a soft-water drinker is sometimes disordered when he begins to drink hard water. One of the characteristic difficulties met with in these inquiries is that, unlike our cows and horses, we are not confined to our own water supply. In Glasgow, for instance, persons who drink beer receive the hard water of the breweries. His object in bringing this question up was to call the attention of fashionable physicians to an excellent opportunity which has arisen (and which it would be a pity not to embrace) of studying the effects of hard water in a very exaggerated shape. He referred to the Taunus water, now so much drunk in fashionable society, which contained about 100 grains of carbonate of lime and 200 grains of common salt per gallon. This was five times as hard as the typical hard waters of the country.

In the course of the discussion which followed, Dr. Carr observed, with respect to Kent water, which was very hard, that it contained a large percentage of lime, and was very wholesome for young persons. The children of Kent were singularly straight-legged, and it was well known that lime was readily assimilated in the system and created sound bone.

Prof. Wanklyn said that Kent water was, as a rule, as pure organically as many times rectified distilled water. Hard water was, it was true, good for children, as they refused lime in various shapes; but it was very doubtful whether, later on in life, hard water was so good for those who partook of it. He had heard that hard water produced goitre, but he could not say that was so without further inquiry.

Two other very important papers were read before this department—one by Dr. Paton, 'On the Action and Sounds of the Heart,' and another by Prof. Dewar, of Cambridge, 'Further

Researches on the Physiological Action of Light'—but it is impossible to do justice to them in these columns. Other papers worthy of notice were those of Dr. Cunningham, 'On the Spinal Nervous System of Cetacea'; Prof. Struthers, 'On the Supposed Rudimentary Hind-limb of the Greenland Right Whale'; and Dr. Urban Pritchard, 'On the Termination of the Nerves in the Vestibule and Semicircular Canals of the Ear in Mammals.' This department may be congratulated on the considerable number of excellent memoirs received, especially on physiology, showing the activity and success of our native physiologists. Many eminent anatomists and physiologists were present, and sustained good discussions.

ANTHROPOLOGY.

(SECTION D.)

THE Monday meeting was opened with a paper, by Mr. Hyde Clarke, in explanation of the relations to ancient anthropology of the late G. Smith's discoveries at Carchemish. Having referred to the decipherment of the Hamath inscriptions, and to his own investigations on the remains of Canaanite in the Bible, and the affinities of the town-names of Palestine, he proceeded to support the connexion between Khita, Hittite, and Hamath with Etruscan, which had been attributed to him. Citing M. Clermont Ganneau's identification in Palestine of an existing Canaanite population, he attributed to the same class the population and language of Etruria, connected by Lydia and Phrygia. To this family of ancient culture he assigned the earlier civilization of India, and, further, the languages, mythology, and culture of Peru and Mexico.

Mr. J. Park Harrison touched on some remains of alleged picture-writing from Easter Island, as one of the points in the former migrations from the Old World to the New.

The discussion on Capt. Hay's paper, 'On the Horned Men of Akkem, in Africa,' was limited, as no feasible explanation was offered of the natural or artificial origin of the phenomenon. It consists of a short horn on each cheek-bone, rising upwards towards the eye, and affecting males.

A paper, 'On the Rodiyas of Ceylon,' by Mr. Bertram F. Hartshorne, was the subject of comment by Mr. Wallace, as offering, in his opinion, an example of a once more cultured race trodden down and abused by conquerors.

Mr. Nicholls read his 'Observations on Natives of the Solomon Isles, New Caledonia,' &c.

Mr. Pengelly, on Tuesday, invited the attention of the Department to the discovery of animal bones in an urn found at Chudleigh, in Devon, with the view of ascertaining other cases.

Most of the time was unfortunately taken up with a paper, by Mr. Barrett, entitled 'Phenomena connected with Abnormal Conditions of Mind.'—Dr. Carpenter, in the discussion, vindicated himself from the allegations of having altered his opinions with regard to such supposed manifestations.

The last paper was by Dr. Phené, 'On Localities where the Arthurian Apple and its Legends are supposed to be found.'

The Department closed, on Wednesday, with papers on Craniology. Three Professors of the University laid before the members minute accounts of three classes of remains, their measurements, and their relations to comparative anatomy. Dr. Knox dealt with the skull and skeleton of the Bushman; Dr. Allen Thomson with those of the Mincopies of the Andamans; and Prof. Cleland with a skull from the Sooloo Archipelago; and further light was thrown on the subjects by the discussion. The short skeleton of the Mincopie was compared with that of the Bushman, and both with the larger and relatively gigantic skeleton of the European. The pelvis of the women attracted chief attention, as showing a depth comparable to that of the anthropoid apes. On the other hand, the structure of the lumbar vertebrae in connexion with the pelvis was pointed out as diverging from that of the Gorilla and the apes. The existence of two distinct lan-

guages on the Great Andaman, and the relation of these to other languages of short races, were also referred to.

The Rev. J. M'Cann, D.D., closed the proceedings with a paper 'On the Origin of Instinct,' in which he sought, from experiments on bees, to controvert the Darwinian views on hereditary transmission of propensities.

ZOOLOGY AND BOTANY.

(SECTION D.)

A LARGE portion of Mr. Wallace's presidential address to the Section was occupied with matters falling within the scope of this Department, and may fitly be noticed here. Mr. Wallace commenced by referring to the striking development in recent years of surface-geology or earth-sculpture, and comparing it with the surface-biology now so much studied, in the endeavour to explain the external characters and general relations of plants and animals. Once more suppressing his own high claims, Mr. Wallace described Mr. Darwin as the founder of philosophical biology, for he had developed, with rare patience and judgment, a new system of observation and study, guided by general principles which are almost as simple as gravitation and as wide-reaching in their effects.

The general biological phenomena to which Mr. Wallace called attention may be comprehensively termed the relations of living things to their environment. In addition to the influence of sexual selection, and of the need for protection from their enemies, in developing the external characters of animals, another cause at work appears to be the influence of locality, the nature of which is unintelligible at present. The group of butterflies, so remarkable for their infinite variety of colour and marking, was selected for special illustration of this idea. A few examples may give an idea of the phenomena to be explained. In South America there are three sub-families, specially protected otherwise than by colour, which have parallel variations of tint and pattern, each peculiar type of colouration being characteristic of distinct geographical sub-divisions of the continent. The resemblance thus produced between butterflies of widely different genera is often so close and minute that only a critical examination of structure can detect the difference between them. Another class of facts is represented by the butterflies of the small island of Amboyna, which are larger than those inhabiting the much more considerable islands surrounding it. In Celebes a peculiar form of wing and much greater size runs through a whole series of distinct butterflies.

The supposition of parallel cases in the mammalia produces a forcible impression. If we conceive the gnus, elands, and buffaloes of Africa, all coloured and marked like zebras, stripe for stripe; the hares, marmots, and squirrels of Europe to be all red, with black feet, while the corresponding species of Central Asia were all yellow, with black heads, we shall form some idea of the remarkable series of facts connected with the Lepidoptera requiring explanation.

A number of interesting facts respecting the colours of birds were dwelt upon, some of them leading to the inference of a relation between sense-acuteness and colours, which might account for many anomalies. Another branch of Mr. Wallace's address dealt with the relations between insects and plants in islands, and the increase in our knowledge of cases in which birds, and especially humming-birds, are the agents in plant-fertilization. The abundance of ferns in certain islands appears to be coincident with extreme entomological poverty, preventing the large development of flowering plants from seeds arriving accidentally. In other islands only such flowers flourish as are independent of insect-fertilization, and these have generally small, green, and inconspicuous flowers. Our space is insufficient to indicate the great number of strange facts adduced by Mr. Wallace as opening up curious problems which may lead to valuable results. He showed

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that many of them were connected with questions of locality, and required full and accurate knowledge of the productions of a number of small islands and other limited areas, and the means of comparing them. This was impossible with the present condition and arrangement of museums and collections. Nothing but complete geographical grouping of Fauna and Flora would form a sound basis for these inquiries.

In a few important sentences, Mr. Wallace spoke of the tendency which he had observed among men of science to pass from one extreme to the other, from a profession of total ignorance as to the mode of origin of all living things, to a claim of almost complete knowledge of the whole progress of the universe, from the first speck of living protoplasm up to the highest development of the human intellect. It was not long ago that facts were contemptuously ignored, because they favoured the views now popular; at the present day it seemed that the facts opposing the latter hardly received due consideration.

Dr. I. B. Balfour read a paper 'On Mascarene Species of Pandani,' or Screw Pines, which he had observed when acting as botanist to the expedition which went to the Mauritius to observe the Transit of Venus. He remarked that the Mascarene Islands, which included the Mauritius, Isle of Bourbon, Isle of Rodrigues, and Seychelles Islands, were characterized by the existence in them of numerous endemic species and genera of Pandani. There were twenty-two species of these plants known, of which twenty occurred in the Mascarene group of islands, and were endemic or peculiar to these islands. Considerable difficulty has been experienced in classifying them, but they had found that nine of the species were endemic to the Mauritius, two species were found in the Isle of Rodrigues, four in the Isle of Bourbon, and three species, endemic and quite distinct, in the Seychelles. There were several species which seemed to have been introduced. In classifying them, the leaves only afforded a few characteristics, some of them being more spiny than the others. The plant was dioecious, and the male plant might afford good characters for distinction, but only a few plants had been in flower at the time of his visit, so that these characteristics had been very difficult to get. He exhibited specimens of the fruit, to which he proposed the name *Syncarp* should be given.

Mr. Bentham and other botanists present thought the name *Syncarp* was not suitable to the fruit of all the species of *Pandanus*. Mr. Bentham showed that this group had great interest, as being a representative of one of the oldest types of vegetation. Dr. Balfour's contributions on this subject were consequently of high value.

Prof. W. C. Williamson, of Manchester, gave an address on his recent researches among the Coal Plants, especially *Calamites*, *Lepidodendron*, and *Sigillaria*. He said that the exact determination of their nature and relations was of the utmost importance in regard to the theory of evolution. He adduced arguments in favour of his view that there is no foundation for separating *Calamites* into two genera, *Calamites* and *Calamodendron*. He pointed out the characters of some new forms of *Lepidostrobus*, or fruits of *Lepidodendron*, and dwelt upon the tendency of many of the coal plants to develop into a very uniform type, making it almost impossible to identify fragments of their woods or of their barks, and demonstrating the absurdity of attempting to establish genera and species upon such unrecognizable fragments.

Mr. C. W. Peach read a paper 'On Circinate Vernation of *Sphenopteris affinis*, and on the Discovery of *Staphylopteris*, a genus new to British rocks.' Mr. Peach has found *Sphenopteris affinis* in the black (carboniferous) shale at West Calder, near Edinburgh, in forms showing its circinate vernation from the earliest stages to the completion of the plant, and after seeing these different forms he considered that several species had been made out of this one. The interest of his discovery of the genus *Staphylopteris* in Britain consisted in the fact that it was already well known in the carboniferous rocks of Illinois and Arkansas.

Prof. Leith Adams, in describing the fossil remains of Malta, referred especially to the gigantic fossil land tortoises which he had found there, and which were much larger than those of the Malay Archipelago or the Mascarene Islands. Yet in their osteology they were remarkably alike, and there had been great difficulty in determining whether they were distinct species or not. The pygmy elephants of the Maltese caves, the smallest only three feet high, were then dwelt upon. Further, there was a large dormouse, as big as a guinea-pig, found in such numbers that five or six specimens could be obtained out of one spadeful of mould. Among the fossil birds was a swan, one-third larger than any modern one. Altogether there were found in Malta remains of 150 extinct animals, which could not possibly have existed upon it except when it was united to a continent.

Mr. Spence Bate's continuation of his Report on the structure of the crustacea dealt with the results of a series of observations on the form and structure of the eyes in crabs, pointing out that these organs were in some cases covered by and received support from the carapace, and in others they were supported by a jointed peduncle. The segments and appendages of the fore part of the animal were principally examined, one conclusion being that the seven sections of which the head was composed should be regarded as completely different from the other parts of the body.

Dr. Carpenter's account of renewed researches on the nervous system of *Antedon* (*Comatula rosaceus*), and a paper by his son, Mr. P. H. Carpenter, 'On the Anatomy of the Arms of Crinoids,' were of considerable interest as bearing on the question of the classification of the crinoid group. Dr. Carpenter maintains that a tract of tissue which is apparently the channel of motor impulses to the arms, although not having the structure of ordinary nerves, is yet a nerve in function.

Prof. Cohn, of Berlin, made a number of beautiful experiments to show the growth and formation of artificial silica cells. Prof. Young, of Glasgow, gave an account of the arrangements in progress at the Hunterian Museum under his charge, by which the greatest advantage to the public as spectators would be combined with the best means of study by curators and other students. Within the same cases would be contained skin, skeletons, soft parts, and allied fossil remains, enabling much better instruction to be given than when they were scattered in different parts of a museum, or in different museums. Prof. Dickson exhibited and described a number of interesting monstrosities and other peculiar structures in plants.

It cannot be said that the Department of Zoology and Botany has been properly supported this year, although individual communications have been of the highest worth. So many branches of natural history were unrepresented by contributions, that one is tempted to doubt whether they are not very much neglected in Great Britain.

GEOGRAPHY. (SECTION E.)

ON Tuesday the first paper was by G. E. Cerruti, 'On his Recent Explorations in North-west New Guinea.' Signor Cerruti explained that, having previously gained much experience during various voyages in the Eastern Archipelago, he was entrusted by the Italian Government, in 1869, with a special mission to visit North-western New Guinea, and inquire into the practicability of establishing a penal settlement on its coasts. He chartered the schooner *Alexandra* at Singapore, and left that port on November 12th, accompanied by a staff of Italian officials. His inquiries were directed to the islands lying off the western extremity of the country, all of which he described as rising from a shallow sea, and to consist largely of recently upheaved coral formations, strata of older formation and basalt being intermixed with coral banks and deposits of recent marine shells. A rich vegetation springs from the fertile soil, and, wherever the scanty native population have settled down to agricultural pursuits, rich crops of all eastern tropical produce have been the result. Al-

though the main object of his expedition was not attained, he was able to survey new navigable channels and a large tract of coast line never before visited, his observations having since been incorporated in the charts of all maritime nations. The rest of Signor Cerruti's paper was occupied by a description of the attractiveness of North-western New Guinea as a field for European colonization.

After a brief description by the Rev. James Paterson of a journey he had made across Finland, from Uleaborg to Archangel *via* Kemi, Prof. Forbes read a paper 'On the Site of the Grave of Genghis Khan in Mongolia.' The exact site of the tomb, he said, has been long a vexed question. According to Marco Polo, the body was taken to the mountain called Altay, in reference to which Colonel Yule says that by this is certainly not meant the Great Siberian range now bearing the name. Col. Yule concluded, after comparing the remarks of Senang, Setzen, Rashiduddin, Quatremère, and Timkowski, that the site was more probably on the great wooded hill to the south of Urga or Kuren, in the desert of Gobi, a sacred mountain, not permitted to be visited by foreigners. But there is no tradition to that effect, and, according to all the evidence, its position seems to be somewhere near the River Selenga. While travelling from Peking to Europe, by Mongolia and Siberia, last year, Prof. Forbes came upon the remains of a stone structure of so remarkable a form that he made a rough plan of it, and determined its position as well as he was able. The Siberian merchants with whom he was then travelling said that it was a burial-place, but could give no further information. The Secretary of the Russian Consulate at Urga, Mr. Pedarin, thought he recognized the place from the author's description, and that it was called Ulang Khudukh, or the Red Well. He said that it was a tomb, but that he did not think it was Mongolian. The place is on the road from Peking to Urga, but, as the road changes frequently, this does not describe it very accurately. This, also, is probably the reason why no one has mentioned it before. It is almost a day's journey from Urga, viz., from twenty to twenty-five miles, and is situated on the plain at the top of the hill, on the way to Urga. The commencement of the descent is the first place where trees are seen on the northerly journey, and the grave is as far before this hill is reached as Urga is beyond it; it is at a point where the author's route diverged sharply to the west, and there are mountains near it. The tomb consists of a stone structure which is now level with the ground; there is a circle of stone ten feet thick, and 100 yards in diameter, and in the centre of this there is a circle which has once been a covered building, some fifteen yards in diameter, to the south-west of which, and in contact with it, is a second sort of ante-chapel, about half the size of the main one. From the central building there is a paved pathway, ten feet wide, running exactly to the east, up to the stone circle. Beyond this there are two rows of stone circles, running north and south, four in each row, each about six feet diameter, and separated by distances of about twenty yards. The author thought it would be interesting to know if this form of tomb had been met with elsewhere.

Two long descriptive papers followed, one by Dr. Litton Forbes, 'On the Samoan Archipelago'; the second by W. Barrington D'Almeida, 'On Perak and Salangore.' A short account of an important recent exploration of the River Putumayo, in South America, by Mr. Alfred Simson, concluded the business of the Section. The Putumayo, or Içá, is a large tributary of the Amazon from the north, rising in the Andes of New Granada, in the State of Cauca. The result of Mr. Simson's adventurous voyage up the unknown stream in a Brazilian Government steamer, liberally lent him for the purpose, was to prove that it is navigable to within a practicable distance of considerable centres of population in New Granada, and that it must in future become the highway of commerce between the provinces of Pasto and Popayan and the outer world. The river is 1,200 miles long, of which 1,050 are navigable for river

boats not exceeding five feet draught. Throughout the whole of this length it flows through a rich alluvial plain or valley. The average current is about three miles an hour.

MECHANICAL SCIENCE. (SECTION G.)

THE Section did not meet on Saturday, the excursions on that day, and more especially that to Loch Fyne and Benmore, on the invitation of Mr. Duncan, proving more attractive. On Monday the proceedings commenced by the Chairman announcing to the Section the decision of the Committee as to what had taken place in the Section on Friday with regard to the proposal to renew the "Rainfall Committee." The decision ran as follows:—"The Committee of Section G. has had under consideration the resolution as to the reappointment of the Rainfall Committee, but, after conferring with Mr. Symons, they have concluded that the time has now arrived at which this work should be taken up in a larger and more public spirit, and consequently that the grant hitherto made should now cease, in the confident expectation that those who have hitherto greatly benefited by the laborious and valuable work carried on by Mr. Symons for the Association will come forward and make this work of the Rainfall Committee their own, and the Committee of Section G. records its hearty and warm thanks to Mr. J. G. Symons for those valuable services, which have proved so important to many branches of science, and have redounded to the credit of the British Association." This Committee will therefore no longer continue. The Report of the Committee 'On the Ordnance Datum of Great Britain' was then read as follows:—"The Committee appointed last year to inquire into alleged uncertainties in the actual position of the datum level of the Ordnance Survey of Great Britain reported that sufficient information had been collected to satisfy them that considerable uncertainty existed on the subject, but that they required additional evidence, which was in course of being collected, before their Report could be completed. Under these circumstances, the Committee asked to be reappointed.

Prof. Osborne Reynolds then read the Report of the Committee on Steamship Propellers, supplemented by a paper by himself 'On the Steering Qualities of Ships.' A large number of experiments have been made by the Committee, and these have completely established the fact that the reversing of the screw with full way on very much diminishes her steering, and reverses what it leaves, so that, when a collision is imminent, to reverse the screw, and use the rudder as if the ship would answer to it in the usual manner, is a certain way of bringing about a collision, and, to judge from accounts of collisions, this is what is done in nine cases out of ten. A very long and interesting discussion followed, in which Mr. Oldham, Capt. Bedford-Pim, Mr. W. Denny, Capt. Verney, and M. Löwenthal-Lonsdale took part.

M. Charles Bergeron then brought before the Section a paper, descriptive of his system for removing sand bars from harbour mouths, and preventing their formation. He said that at the Bristol Meeting of the Association last year he had read a paper on a very simple and economic process, which he had patented, to deepen seaports, and to remove the sand-bars which obstruct the entry to them, or limit their use to vessels of small tonnage. The process had been suggested to him on observing the effect of a spring of water bubbling up through the sands which were left dry at low water, in the neighbourhood of a little town on the coast of Normandy. The water bubbled up from the bottom of a basin formed to some depth in the sand, from which the water overflowed in a little stream which cut a channel for itself from the basin to the sea. Suppose that, instead of one solitary spring on the sand there were many, close together and overflowing in the same direction, it is evident that they would cut a wide and deep furrow or ditch, which would be always full of water at low tide. The springs would lift the sand vertically, and the current

made by the receding tide would be sufficient to carry it away. The same effect would be obtained with a pipe, closed at each end and pierced with holes, through which water was forced by means of a pump, after the pipe had buried itself deep enough in the sand. From each hole a little stream would flow in the direction where it encountered least resistance—that is to say vertically—lifting up all the sand which was in its way. The sand, put in a state of suspension in the current of the receding tide, would be carried away with it, and a broad deep channel would be created above the pipe along its whole length. M. Bergeron gave the results of numerous experiments which he had instituted upon a large scale, and he said that he was able to give the opinion confidently, that if his system were applied on the seashore, by pumping and gradually increasing the pressure of water in the pipe used, it would at length reach the clay or stone, on which the jets would no longer act.

A very elaborate and exhaustive paper was then read, by Mr. F. J. Rowan, 'On Boiler Incrustation and Corrosion,' in which the author had made a very complete *résumé* of the subject. The proceedings were ended by a paper 'On the Direct Motion of Steam Vessels,' by Mr. R. Mansel.

The proceedings of Tuesday were commenced by reading an interim Report of the Committee on "British Measures," which states that the Committee had done nothing, but hoped to do something if reappointed. A paper, by Mr. A. B. Brown, of a purely technical character, descriptive of an engine for starting and reversing large engines, was brought before the Section. Prof. A. B. W. Kennedy explained Reuleaux's theory of mechanism. Prof. Reuleaux is the director of the Gewerbe-Akademie in Berlin, and has recently published in his 'Theoretische Kinematik' a method of studying mechanism which is now extensively used in the polytechnic schools, not only of Germany, but also of Russia and Italy. Among the characteristics of this method, Prof. Kennedy mentioned the use of the curves called "centroids," the systematic investigation into the restraint of moving bodies, the treatment of fluids in mechanism by a method absolutely analogous to that of rigid bodies, and the rotations which he has devised for mechanisms. Prof. Kennedy also illustrated at some length, by diagrams, the nature of what Reuleaux calls the kinematic analysis of mechanism, pointing out its usefulness in the investigation of the relations between various mechanical combinations.

Mr. Mortimer Evans explained his "safety lock for facing points." This was followed by an interesting and suggestive paper, by Capt. Douglas Galton, under the title of 'Notes on Railways on the Three-foot Gauge in the United States.'

The author said that in recent years a considerable development of this class of lines had taken place. The railway in the United States is the pioneer road; it must be made as cheaply as possible at first, and improved as population increases. He stated that the cost of two narrow-gauge lines was given at 1,900*l.* and 2,300*l.* per mile, and that another, which was, however, only ten miles long, cost 3,500*l.* per mile. He compared the weight of the engines and cars on the broad gauge with those used on the narrow gauge, and maintained that on the narrow gauge the hanging load bore a greater proportion to the dead weight than on the broad or standard gauge of 4 feet 8½ inches. On the narrow gauge the cars had been constructed so as to be as light as possible, but a desire was gaining ground to increase the weight of the car. To make the cars heavier and broader would, he believed, render them unstable; but if these heavy cars of eight feet wide were run sparingly, he thought economy could still be claimed for the three-foot gauge on the ground of diminished width of railway. It was useful where the traffic was light, but where the traffic was heavy and regular he gave as his opinion that it would require to be converted to the standard gauge, and that a standard gauge line would answer all purposes if made with a light rolling stock.

Mr. J. Steel described his continuous brake on

the compressed air system, and discussed the brake problem generally. The form of blocks for testing cement, and how far the strength of cement was affected by delay between mixing and placing it *in situ*, was practically treated in a paper by Mr. G. F. Deacon. Major Beaumont described how subaqueous rocks are removed by the use of the diamond rock borer. An ingenious form of fixed lamp for workshops, mines, and in railway stations, and are suitable for burning oils, and the heaviest hydrocarbons, was described by Mr. R. Lavender. By means of a jet of steam a rapid draught is created, which, guided through the centre of the wick, and on the sides, supplies air in suitable quantities for the complete combustion of the oil, and in producing a cheap and brilliant light. Mr. Jas. Nasmyth sent for inspection of the Committee a drawing of a pendulous safety valve for steam-boilers, stating that a forty years' experience of it in use confirmed the perfect efficacy of its action. The application of a system of spring heads to piers was explained by Mr. Mortimer Evans, and a paper explanatory of a method for flanging iron and steel plates, by Mr. A. B. Brown, brought the day's proceedings to a close.

In order to complete the business of the Section, a short sitting was held on Wednesday morning, when Sir William Thomson brought before the meeting an extension of that system of signalling which he had explained at a former meeting of the Association. It will be remembered that he suggested the adoption, both for lighthouse and naval purposes, of a system of flashing lights, or the raising and lowering flags, with long and short intervals, on the principle of the Morse telegraph, where the alphabet is formed by a combination of dots and dashes. Sir William Thomson's present suggestion is to adapt the system to sound, and express the signals by long and short sounds, *i. e.*, of notes of slightly different pitch,—the grave representing the long signal, or dash, the acute the short signal, or dot. Two steam whistles, of different notes, was perfectly efficient for the purpose. Mr. Harper described some ingenious railway-safety appliances, and the business of the Section was concluded by the reading of the following papers: 'On a Hand-Machine for Shaping and Finishing Metal Surfaces,' by J. W. Beynon; 'Apparatus for Mine and Warehouse Hoists,' by Thomas Dobson; 'On an Improved Steam-Ferry,' by William Simons; 'On Drainage Outlets through Slob-lands,' by A. Crum-Ewing; 'Recent Attempts at Patent Legislation,' by St. J. V. Day; and 'Communication between Passengers and Guards in Railway Trains,' by W. Stroudley.

THE GEOGRAPHICAL CONFERENCE AT BRUSSELS.

THE Geographical Conference, convened by the King of the Belgians, was attended by thirty eminent travellers, geographers, statesmen, philanthropists, and leading members of geographical Societies. There were present the Presidents of the Geographical Societies of London, Paris, Berlin, and Vienna (Sir Rutherford Alcock, Admiral de la Roncière-le-Noury, Baron Richthofen, and Dr. von Hochstetter); the African travellers, Col. Grant, Capt. Cameron, Dr. Nachtigal, Dr. Rohlf, M. E. Duveyrier, M. de Compigné, Lieut. Lux, and Dr. Schweinfurth; M. de Semenof, the Russian explorer; M. Maunoir, the learned secretary of the Paris Geographical Society; Sir Bartle Frere, Sir Henry Rawlinson, Sir T. Fowell Buxton, Admiral Sir Leopold Heath, Sir John Kennaway, M. MacKenau, Baron Hofmann, the Austrian Minister of Finance, Count Zichy, Commander Negri, and seven Belgian gentlemen, including Prof. E. de Laveleye, and Count d'Alviella. Sir Samuel Baker, Dr. Petermann, Dr. Kiepert, M. de Lesseps, Signor Correnti, and several others, had been invited, but they were unable to attend. The African travellers mustered strongly, and a gathering like this has not often, if ever, taken place; but professional geographers were hardly represented at all, and this is a matter of regret.

The meetings took place at the Royal Palace,

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and were presided over by the King. In his opening address, on the 12th inst., His Majesty said that they had met to suggest means for throwing open the interior of Africa to humanizing and civilizing influences. Those who had devoted most attention to this subject had arrived at the conclusion that combined and systematic action would be most effective towards the attainment of that object. Belgium, a neutral country, he thought, was eminently suited for a conference of this kind; and he should feel proud if the first impulse of a movement such as they had at heart were to proceed from Brussels. They were about to discuss the means by which the flag of civilization might be planted in the very heart of Africa, and how they might best enlist the sympathy of the masses,—for their cause could not prosper without a generous support. His Majesty then pointed out the principal questions which would have to be discussed, and announced that Mrs. Heine, a Swiss lady, had already forwarded a donation of 800*l.* in support of their enterprise. The King himself, we may observe in parenthesis, has subscribed 4,000*l.*

On the conclusion of this address the African travellers present pointed out, on a large diagram, the regions which had been explored by them, and Signor Correnti complained of the ill-will of the Egyptian Government, which jeopardized the success of the Italian expedition, now on the road to Shoa. Baron Hofmann read a letter just received from Consul Hansal, at Khartum, which contained an account of Piaggia's journey from Magungo to Lake Kabekki.

The King then suggested that they should discuss, first of all, the advisability of establishing stations on the coast and in the interior, to serve as bases for their efforts at exploration and civilization. Dr. Rohlf's considered that stations of this kind would prove of great advantage. Years ago England had endeavoured to establish such stations at Murzuk and Ghadames, and the station at the confluence of the Benue and Niger still existed, and might serve them as a pattern. Sir Henry Rawlinson pointed out the importance of the station recently established on Lake Nyassa, which was promoting the civilizing work which they had at heart. He thought it important that a road should be opened right across Africa. Admiral de la Roncière was of opinion that such stations would prove useful in our efforts at repressing the slave trade, and although we might not succeed at once in its extirpation, we ought to endeavour to mitigate its horrors, and to limit its extent. Missionaries and merchants would likewise be benefited. Sir John Kennaway cited Livingstone in support of his opinion that if means could be found to purchase the ivory direct from the native kings and to carry it to the coast, the slave trade would die a natural death. Armed steamers ought to be placed on the Tanganyika, to aid in its repression. Sir T. F. Buxton eulogized the manner in which Col. Gordon was pushing his fortified posts into the interior, and recommended a similar system for civilizing purposes.

Dr. Nachtigal was of opinion that we ought to confine ourselves, for the present, to the commercial high roads already opened. African explorers had always been most successful when they followed these roads, or were travelling under the protection of traders known in the country. In discussing the abolition of the slave trade we ought not to lose sight of the fact that a large proportion of the slaves brought from the interior met with a ready market in the Mohammedan countries along the sea-board. If we shut up one road, the slaves would be brought down by another; nor would steamers prove of much use, for they were circumscribed in their movements, and the slave-dealers would easily avoid the lakes. Slavery would exist as an institution as long as Islamism exhibited vitality, and its repression could be attained only by the incessant labour of many years. Sir Rutherford Alcock thought that Gordon's operations on the Upper Nile were full of promise for the civilization of Africa. Livingstone was mistaken when he recommended Zanzibar

as the head-quarters for this civilizing work, instead of Bagamoyo, or some other point on the mainland opposite. It was of the utmost importance that the road to Ujiji should be kept open. The stations to be established ought to be international free-ports, fortified against attack, and he felt sure the natives of India would most gladly settle down at them if proper inducements were held out to them. Sir Bartle Frere thought with Dr. Nachtigal that we ought to avail ourselves of existing roads of commerce as bases for our operations. There were many suitable points for stations between the Jub and the Portuguese possession. If they were thrown open hospitably to scientific men, merchants, and missionaries, settlements would soon spring up around them.

This concluded the general debate, and His Majesty then proposed that the members of the Conference should form themselves into two Sections, one to include Germans and Russians, the other English, French, and Italians, and that they should further discuss these questions separately.

The sectional reports were submitted to the general meeting on the following morning, the 13th. The German Section proposed that the field of operations should be bounded on the north by the basin of the Nile and the independent countries of the Sudan, on the south by the Zambezi, and on the east and west by the coasts, but that the Egyptian territories should be excluded. Egypt was using her best efforts to promote civilization in the regions recently occupied, and would naturally be jealous of foreign interference. This proposition was accepted unanimously. The establishment of stations and opening of routes, however, led to an animated discussion. The Anglo-French Section proposed a most comprehensive plan, which included placing a steamer on Lake Tanganyika, the opening of one route from Lake Nyassa to the Mwtan Nzige, and of another from the east to the west coast, both to be secured by fortified posts, and the establishment of stations at Unyanyembe, Ujiji, Nyangwe, and Muata Yanvo's capital in the interior, and at Bagamoyo, or some neighbouring point, and Loando on the coast. The German proposition was of a far less ambitious nature. Stations were to be established at places which were already the seat of commerce, and their management was to be entrusted to properly qualified residents. Explorers were to be despatched from these stations into the interior, who would have to select sites for other stations, and make propositions for their outfit. Scientific interests were given the preference, for it was thought that the exploration of the country would promote most effectively the other objects aimed at. In the end neither of these propositions was adopted in its entirety. It was resolved that a number of "hospitable" and scientific stations should be established on the coast as well as at the places in the interior, recommended by the Anglo-French Section, and that these should serve as depôts whence explorers might draw supplies.

The third and last meeting was devoted to a discussion of the organization of this international association for the opening of Africa. There are to be "National Committees" in each of the countries represented at the Conference, by whom an "International Committee" will be elected. The presidents and two members of each of the geographical Societies are to be placed upon this International Committee, which will meet occasionally at Brussels. An "Executive Council," of three members, representing respectively England, France, and Germany, will support the president, and there will also be a secretary, to be appointed by him. On the proposition of Sir Bartle Frere, the King accepted the presidency for one year, but said that this office ought to be held in rotation by members of different nationalities. Sir Bartle Frere, Dr. Nachtigal, and M. de Quatrefages form the Executive Council.

The members of the Conference were entertained in the most hospitable manner. They had suites of apartments assigned them in the Palais de Bruxelles, carriages were placed at their disposal,

they dined at the royal table, and joined the royal circle in the evening. G. SCHWEINFURTH.

GEOGRAPHICAL NOTES.

DR. SCHWEINFURTH, who came expressly from Cairo to attend the Geographical Conference, will almost immediately return to Egypt.

It is said that the "German African Association" is about to transform itself into a German branch of the International Association established under the presidency of the King of the Belgians.

The last number of Guido Cora's *Cosmos* contains some further papers on New Guinea, together with a map of Geelvink Bay and the northern coast as far as Humboldt Bay. This is a subject which Signor Cora has made his own, attracted thereto by the exploits of Italian travellers like Beccari, D'Albertis, and others, and we know of no other geographical periodical which contains such ample information on that island, and keeps its readers equally au courant on all that is being done there.

Dr. H. Wagner's article on the "Bolivian Litoral," in the forthcoming number of Petermann's *Mittheilungen*, will be read with interest. It is based, to a large extent, upon information furnished by the German Consul at Antofagasta, and accompanied by a capital map. Not many years ago this part of Bolivia was looked upon as one of the most inhospitable portions of the dreaded Atacama desert, but the discovery of guano at Mejillones and the silver mines of Caracoles have attracted immigrants, and Antofagasta, the principal town on the coast, already numbers 6,000 inhabitants.

M. Severtsef is about to start upon a journey of exploration which promises to yield important results. In the course of this winter he proposes to explore Ferghana and the mountains to the south of it, and in the course of next year he hopes to be able to extend his labours to the Pamir table-land. He will be accompanied by Mr. Schwarz, as astronomer, by a mining engineer, a botanist, and six Cossacks.

Science Gossip.

MESSRS. SMITH & ELDER announce the following scientific works: 'The Functions of the Brain,' by Prof. D. Ferrier; 'A Course of Practical Histology,' by Prof. E. A. Schäfer; 'A Handbook of Ophthalmic Surgery,' by Mr. B. Thompson Lowne; 'A Treatise on the Theory and Practice of Medicine,' by Dr. J. Syer Bristowe; and 'A Directory for the Dissection of the Human Body,' by Prof. Cleland, of Galway.

DR. ASA GRAY, the eminent American botanist, has collected his essays on the Darwinian theory into a volume, under the title of 'Darwiniana: Essays and Reviews pertaining to Darwinianism.' Dr. Gray is well known as a firm though discriminating supporter of Mr. Darwin's views.

MESSRS. W. COLLINS & SONS promise, for the ensuing season, the second volume of Prof. Thorpe's treatise on 'Inorganic Chemistry,' a work on 'Acoustics, Light, and Heat,' by Dr. W. S. Davis and Mr. W. Lees, and a volume on 'Theoretical Shipbuilding,' by Mr. S. J. P. Tnearle, F.R.S.N.A.

ONE result of the grants made by the British Association is to provide for ethnographic photographs of the races inhabiting the British Empire, by means of a Committee. As we announced, it was first proposed by Mr. Brabrook to make the application for the British Isles; but, on the suggestion of Sir Walter Elliot, supported by the Anthropological and Statistical Sections, the project was extended so as to include the empire at large. This is with the view of co-operating with the Indian Government, and inducing the Colonial Governments to adopt a like course, as well as to obtain a uniform action.

THE vote of the General Committee having decided that the meeting of the British Association shall, in 1878, be held in Dublin, it is expected the time will be so arranged as to admit of the great telescope of Messrs. Grubb being directed to the moon in its first half. The completion of

this, the telescope of the largest aperture, was one chief ground which determined the selection against Leeds. It is to be observed that it is constructed for the Government of Austria, and not of Australia, as announced in some of the daily papers.

THE last three small planets discovered by Prof. Peters, at Clinton, on the 10th, 17th, and 28th of August, have received from him the names of Loreley, Rhodope, and Urda, respectively. As already mentioned in the *Athenæum*, the last raises the number of known small planets to 167.

PROF. MC'CHEENEY, of Missouri, who accompanied the geological party under Prof. Shaler to the Cumberland Gap, was killed, in July last, by the falling in of the sides of an Indian mound which he had excavated.

FINE ARTS

DORÉ'S TWO GREAT WORKS, 'CHRIST LEAVING the PRÆTORIUM,' and 'CHRIST ENTERING the TEMPLE' (the latter just completed), each 31 by 22 feet, with 'Dream of Pilate's Wife,' 'Christian Martyrs,' 'Night of the Crucifixion,' 'House of Calaphas,' &c., at the DORÉ GALLERY, 25, New Bond Street. Daily, Ten to Six.—1s.

EXHIBITION of the PHOTOGRAPHIC SOCIETY, NOW OPEN, 54, Pall Mall East, from Nine a.m. till Dark, daily; also, on Monday and Saturday Evenings, from Seven till Ten P.M.—Admission, One Shilling; Evenings, Sixpence; Catalogue, Threepence.

THE PRIVATE COLLECTIONS OF ENGLAND.

No. XXVI.—CASTLE HOWARD.

Italian School.

THE Italian pictures here form, of course, the leading group. The visitor first encounters a 'Portrait of a Man,' with a hawk on his fist, by Titian. The man, who seems to be a falconer, looks at the eyes of the bird with an expression most truly rendered and intense. His dress is black, with a narrow edge of white showing at the neck; he wears a dagger at his side, a belt and sword. This work is painted in Titian's silvery manner, with wonderful breadth, great richness and sobriety. Near this picture hangs another Titian, 'Portrait of Philip the Second': a three-quarters length figure, his right hand holding his dagger, in the left his gloves; the face in three-quarters view to our left, the light coming from the same direction. The King wears a white vest, a short cloak with fur on the front and collar, and breeches embroidered with gold; his dark-green sleeves are embroidered with gold. The face is a little slight in handling, but as a rendering of character quite worthy of Titian. It is the countenance of a young man, with a thin, light-brown beard. It is so precise in touch, and so unusually thinly painted, that, if it had been less free than it is, one might almost have ventured to ascribe it to Antonio Moro; the age of the sitter and the style of the picture indicate the phase of Titian's art which this work represents. There is a whole-length portrait of Philip at Chatsworth, taken later in life, and by Titian. A more famous Titian than the Earl of Carlisle's Philip, is the painter's portrait of himself, one of the greater treasures at Castle Howard, a half-length figure, seated at a table, with a paper in the right hand; the head in three-quarters view to our right, the left hand on the thigh. A picture full of intense expression, wonderful artistic insight being perfectly employed in rendering the character with the highest degree of animation. This work belonged to the Orleans Gallery, and was priced at seventy guineas.—By Perino del Vaga there is a 'Holy Family,' a tolerably characteristic example.

Tintoret is a master who shines at Castle Howard, and few English houses are richer in works of this magnificent poet and painter. We first encounter a large landscape and figures, representing 'The Nativity,' or rather, 'Adoration of the Child.' Four stately figures on horseback behind the shed reproduce a noble idea of the kings; three shepherds, the proper subjects of the picture, kneel in front. The Virgin uncovers the child, which is the centre of a mass of white, not radiant, as is occasionally the case in this subject; the child lies in a basket, and forms the centre of the chiaroscuro; the ox and the ass stoop towards the cradle

and seem to sniff it. This is a peculiarly characteristic element in a design by Tintoret, who thus implied his idea of the share of the brute creation in the consequences of the event here depicted. A young female (here the same order of pathetic invention is apparent), clad in a blue dress, leans on the neck of the ass and contemplates the child. The Vision of the Shepherds is represented in the background. Tintoret never hesitated to depict more than one incident on one canvas, provided they were connected by their histories. This work is a piece of lovely and characteristic colouring, alone worth a journey to Castle Howard; it is very little faded; the figures are exceptionally graceful; the drapery of the Virgin and that of one of the shepherds are somewhat artificial in design, but are not entirely unsuccessful. The picture belonged to the Tresham Collection.

In another room hang two landscapes with figures, both by Tintoret, and even more important than the above-named one. The first of these two represents, with tremendous grandeur, and all Robusti's force of inspiration, the 'Temptation of Christ,' who stands on a rock looking over a city on a plain. The tempter is clad like a king, in a crown and robes, and bears a sceptre, with which he points to the vast champaign extending from the foot of the rock, all shown at sunset and seeming to glow in ruddy waves of light, reflected from the enormous lines of clouds above; the summits of the buildings in the city catch and reflect gleams of splendour. The fires of the sky burn between the boughs of the withered tree on our right near the figures; a herdsman and flock pass on the road below, a goat leaps up the rock. The grandeur of this picture is undeniable; magnificent is the conception of that prodigious plain, suffused by pale crimson lustre, the more fervid fires of which strike the topmost portions and glow like incandescent breakers of enormous volume and altitude, yet all the while the solid forms of the landscape are seen through the fugitive and deceitful splendour. The figure of Christ only is out of keeping and inferior in its inspiration.—'The Sacrifice of Isaac' is the subject of the companion picture to the above: the two hang close together. This example is treated as a landscape with figures. Abraham and his son are at an altar on a rock near our right, the angel descends between them, an ass and the attendants are below. This part is little better than commonplace. In fact, in the figures these pictures fail, and are in no way to be compared in this respect with the analogous landscape with figures by Titian, belonging to the Duke of Devonshire (see No. XIII. of this series of papers), which represents 'John Preaching in the Wilderness.' There the union of figures and landscape, noble elements so frequent in Titian's pictures, is marvellous. Such a defect is no characteristic of Tintoret. There is no shortcoming in the grand mountain landscape before us, with a rugged and rocky valley in its middle, along which the last rays of sunset flow in roseate splendours. The sentiment here is utterly different from that with which the 'Temptation' is filled to overflowing, although both pictures owe their expressiveness to the same means—the designing, that is the right term, of the light—exactly the motive of Turner's inspiration, the latter being, however, employed in a very different mood. Readers need not be reminded of the landscapes by Tintoret in the Lansdowne Collection.—By Tintoret here are nobly conceived portraits of two Dukes of Ferrara, bought from the Orleans Gallery for 150 guineas. Three young men, including a servant, are kneeling in a church, at prayer at a desk, and with a large book open before them; the figures are life-size, full length, and their air and costumes are in keeping with the sober effect of the lighted interior; they display withal a richness and depth of tone, and seriousness of sentiment—the last an almost unerring characteristic of Tintoret—which is monumental in its dignity and wonderfully valuable in relation to the subjects of these portraits. The shadows are dark, but clear, the background a greyish

olive, shadowed and half-shadowed wall of stone. Except for the completeness and thoroughness of the execution, the finish and richness of tone, there is much in common between this picture and those of analogous themes which are due to the peculiar inspiration of M. Legros. The same serious pathos, the same simplicity of composition, the sombre colouring, the broad scheme of soft and diffused illumination, obtain in both. The presence of such a picture as this would be an education to a youth.—By Bourguignon is one of his numerous spirited battle-pieces, of which no one can deny the merit, although they seem to attract nobody.

There is a series of views by Canaletto here, which is sure to attract the observer, and few can fail to observe so many brilliant, solid, well-lighted works. Eight of them, which are of cabinet size, give views in Venice, evidently designed for one person, to remind him of a stay in the City of the Sea. Topographically speaking, these works must, for the student and antiquary in Venice, be almost as valuable as the same artist's views in London, have been found to be to us. Fortunately for Canaletto, he has been able to devise varied atmospheric effects, so as to enrich his views and give them even greater diversity and richness than the picturesque architecture enabled him to employ. We must designate these pictures by their numbers, but that will be enough for critical purposes, and identify the respective examples beyond doubt. No. 39, a cloudy sunlight, is rather dull and opaque in colour, even for Canaletto; the effect is obtained or heightened by means of a large shadow on the buildings in the middle distance, and varying illumination of the foreground and the extreme distance, which are most delicately distinguished. No. 40 is a brighter sunlight, illuminated from our left; a black and white boat going athwart the canal has been introduced with great tact. No. 41, the bifurcation of the Grand Canal, has in the centre the Campanile, decked with little flags, tossing in the breeze, the Ducal Palace in full front; the bright sea sparkles in the ripples, the water being painted with the usual clearness and richness of Canaletto, and with rare motion; a picture which is animated beyond the common, and fuller than is frequent of light and colour. No. 45 is a very sunny view of a wide canal, extremely rich in colour, and very warm. No. 43 gives Sta. Maria in the centre, and looks blackish, but it is very full of effect. One of the most remarkable of the Venetian series is a large general view of the harbour, the Ducal Palace appears at an angle, the domes of Sta. Maria and the Campanile are on our left, with a vista of the Grand Canal. This is not so good as No. 46, which sparkles in the brilliant summer light, but it is very broad, true in colour and keeping, and extremely solid. These pictures are hung too high to permit the observer to speak of their execution as to detail, local colour, drawing, and what not else, but they are in positions extremely favourable to general observation and the display of their effects, chiaroscuro, and atmospheric charms. In another room are twelve more views of Venice, evidently parts of the same series as that to which the above-named eight belong, and of similar character and value; also six larger pictures by the same hand, including a noble front view of St. Mark's, which is decidedly one of Canaletto's masterpieces, to which the buildings, treated as they have been, supplied a rich charm of potent local colour, so valuable that it makes us wonder why the painter did not always employ local colour to the same pitch and to the same end in chiaroscuro as here. There is another picture with Sta. Maria on our right, bright but chilly. Another view comprises the Rialto in angular perspective, a capital illustration. Another example, No. 64, with a view of Sta. Maria, is very rich in tone; the pyramid of the Campanile is seen over the roofs of the buildings. All the works of this series, apart from their merits as pictures, which are certainly not surpassed elsewhere, are

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most interesting for the costumes they display, the extreme richness and oddity of which are amazing. But the topographical value of these views, at a time when Venice is being improved off the face of the waters, is beyond a doubt, and cannot be over-estimated.

Contrasting strongly with the suave, bright, and animated Canalettos are two good landscapes by Gaspar Poussin, cabinet works of high merit and rare beauty, one with a building on our right. Likewise, a fine 'Mountain Landscape,' with a citadel on a hill, a lake in front, a boat at the near shore: a fine and grand study.—Here may be noticed a capital portrait, by Sebastian Bourdon, of the 'Marshal La Millaire,' a first-rate example of the painter's manner in portraiture. Bourdon's portraits, good as they are in their way, were not worth much even so recently as 1831, not even when representing historical personages. For instance, 'Christina of Sweden,' formerly in the Orleans Collection, and, doubtless, originally in the possession of Christina herself, and accompanying her pictures when incorporated with those of the Duke of Orleans, sold with Mr. Maitland's pictures for thirteen guineas. We advisedly class Bourdon with the Italians, rather than with the French. Bourdon's portrait of himself was bought for the Louvre in 1803, for 295 francs, and his capital portrait of Descartes, the engraved one, was bought for the Louvre in 1848, for 400 francs! One might well say that times have changed since this artist was employed to decorate the house of M. Bretonvilliers, in the Isle de Notre Dame, Paris, jointly with Charmeton and Baptiste, all working in great state, with much profit and honour.

One of the most interesting illustrations of manners and customs to be observed in the Louvre is a picture, which, owing to its comparatively small technical merit and value, escapes the notice of many; it is the work of Pannini, 'Concert donné le 26 Novembre, 1729' (286), commemorating the birth of the Dauphin. It is well worth anybody's while to look, as through a chronological telescope, at what people did to commemorate the birthdays of that once important, but now extinct, race, the Dauphins of France. As a picture showing the mode of performing an opera in Paris during the very earliest days of operas, this work has an extraordinary attraction for antiquaries of more than one class. The Pannini belongs to a very small category of paintings, and any similar work deserves our attention.—We turn, therefore, with interest to Sebastian Ricci's 'Rehearsal of an Opera,' which is at Castle Howard, comprising portraits of Nicolini, Margarita, and others, all full of character, and painted with much spirit. This, or a similar painting, was at Strawberry Hill, ticketed by George Robins for the memorable sale with the number 114 of the twentieth day, and comprising Nicolini in front, Mrs. Toft at the harpsichord, Margarita sitting in black, Sir R. Rich in blue, with a patch over his eye. It seems to have been painted for Charles Stanhope, and by him sold to John Duke of Argyll, at whose sale Horace Walpole bought it "for a song." At Walpole's sale Mr. Willett bought it. There are two large Panninis here—very fine views of the Forum and the Colosseum.

Fine-Art Gossip.

We understand that a Committee of the Royal Academy is shortly to be formed to take into consideration the better lighting of the Exhibition rooms in Burlington Gardens, and with a view to the immediate improvement of one or more of the rooms in that respect, so that the work may be completed for the next Exhibition.

The rumours which have been frequently spread of late, that there would be no more exhibitions of old masters' pictures by the Royal Academicians, are, so far as the coming winter is concerned, incorrect. The fact is, that R.A.s entrusted with the task of procuring loans for the winter gathering have been busy for some time past, and we expect a very interesting display next year.

A RETURN to an Order of the House of Lords

has been issued, comprising copies of correspondence from February 8, 1876, between the Irish Government, the Treasury, Science and Art Department, the Dublin Society, and Irish Academy, on the proposed establishment of a Science and Art Museum in Dublin.

MR. WILLIAM SMITH, whose decease we recorded last week, has bequeathed to the South Kensington Museum the first right of selection from his paintings in water colours, and all his catalogues of exhibitions and sales by auction, with their indexes, and all his books relating to the Fine Arts. Mr. Smith's collection of catalogues is a large and valuable one, likely to be of great use at South Kensington, where, under reasonable restrictions, a visitor can get a book at a few minutes' notice. He has desired the authorities of the National Gallery of Ireland to select from the remainder of his collections what may be useful to that gallery.

MR. ALLINGHAM informs us that a rather well-dressed young man called on him on Tuesday last with an "Appeal for a Poor Artist," describing his bad health, the pitiful state of his wife, children, &c., and finishing with a list of subscribers, comprising the supposed autographs of some twenty or thirty people, chiefly of well-known artists, with sums of money added to the names, the first of which was "L. Alma Tadema, 17. 1s." Mr. Tadema declares that he signed no such paper, and gave no such subscription. Our readers will therefore be on their guard.

The chapel of ease to the parish of St. James's, Westminster, in the Hampstead Road, formerly had a comely cemetery attached to it, which has, since the disuse of urban burials, been neglected, but not, as reported, allowed to sink to waste and squalor. It is now proposed to convert it into a public garden, as may well be done; but, if it is done, let us hope that at least some records may be retained of the situations of the graves of George Morland and his wife, Hoppner, and Lord George Gordon, all of whom were interred there.

AN interesting and novel feature in modern church-building, reviving that which was by no means common in old works, is presented by the design for a church in Whitechapel, dedicated to St. Mary, replacing the old building which bore the same name. The design, by Mr. E. C. Lee, shows an external pulpit formed at the north-west angle of the structure, where that abuts on the street, with a roof over it, and suited for addresses to passengers in the street. It is highly picturesque, and might be useful, if not certain to cause obstruction in the thoroughfare.

LOCAL journals state that the house in which Goldsmith lived, while usher in Dr. Milner's school at Peckham, in 1756, and where he wrote, it is said, part of 'The Vicar of Wakefield,' has been sold "for building purposes," and will, of course, be improved off the face of the earth.

THE *Builder*, in a series of notes on the architecture of the day in Germany, thus describes the appearance of the now restored and nearly finished cathedral at Cologne:—"The west front of the cathedral is approaching completion. The great western window and gable are finished. The south-western tower has been carried up as high as the arches of the windows in the octagonal lantern; and the north-western tower is only a few feet lower. We are sorry to say that the nearer this great façade approaches completion, the less satisfactory is its effect. There is an entire want of that repose and quiet dignity which we are accustomed to see in the west fronts of our own cathedrals. Nor is this replaced, as is the case in the great French west fronts, by a magnificent effect of light and shadow. Instead of the solemn, gloomy grandeur of the great portals of Amiens or Rheims, we find at Cologne nothing but tameness and correct architectural insipidity. It is a great pity that the modern architects of Cologne Cathedral did not take advantage of the lesson taught by their mediæval predecessors at Strasbourg, Antwerp, and Vienna, and carry up

one tower first. They would then have seen, as did those great artists, that the single tower was quite sufficient for the effect of the building, and would have abandoned the idea of carrying up the second tower, and thus they would have avoided the painful monotony and uniformity which render this front so exceedingly uninteresting," &c.

OUR readers will be grieved to learn that all the old fortifications of Würzburg are being destroyed in order to make way for new houses and streets; the walls have been pulled down, the gates destroyed, and the moat is filled to a level with the land.

MUSIC

OPERA AT THE LYCEUM THEATRE.

THE *début* of another *Amina*, in the person of Miss Ida Corani, shows that the 'Sonnambula' of Bellini is in no danger of disappearing from the *répertoire* of any country so long as there is a strong feeling for melody, and a liking for persecuted heroines of the lyric drama. The lady is Irish by birth and Italian by cultivation, and although she does not efface from the minds of her hearers the memory of former representatives, the impression made was that she will be an acceptable acquisition for operas in her native language. Her voice is a high soprano, thin in the *timbre*, which, however, enabled her to execute the scales and florid divisions with facility and with no ordinary finish, proving that her method has been carefully cultivated. As a *bravura* singer, and for the Persiani-Patti-Nilsson characters, she is likely to take a high position. She has sung in Spain and in Italy on the stage, and also in Dublin; her acting, owing perhaps to nervousness, was not so demonstrative as audiences have had from many other *Aminas*; but if she did not err on the side of excess, she gratified by a simplicity of style indicative of promise for the future. The new tenor, Mr. J. W. Turner, was energetic as *Elvino*; he will have to subdue his ardour, especially as his organ is of a quality to be turned to the best account with practice and polish. Mr. F. Celli sang artistically as the *Count*.

The revised version of 'The Lily of Killarney,' by Sir Julius Benedict, is likely to give a new lease of life to the setting of 'The Colleen Bawn.' Mr. Santley has a *scena*, in the third act, which was not in the original work when produced in 1862; and the merits of this interpolation as a composition as well as the admirable singing of the artist were warmly appreciated. The introduction of an Irish jig was a certain success, and it was encored. The happy *finale* was, as is usually the case in such matters, infinitely preferred to the tragic ending. Miss Julia Gaylord has made a decided advance: her *Eily O'Connor* was excellent. Much may be expected from this young lady; her voice is rich, round, and most sympathetic; she has sensibility, and can act. Her reading of the beautiful air, last Wednesday night, 'I'm alone,' was the perfection of ballad singing. It is curious that this song is the only one in the opera which has the Irish type—that is, is plaintive and pathetic. In Mr. Boucicault's drama he makes every character speak with a brogue, but Sir Julius Benedict in his setting preserves the tone of the German school.

Mdlle. Torriani has reappeared as *Margaret*, in 'Faust,' the title-part by Mr. Packard, the tenor, whose high notes tell, but who is still an inefficient actor. The *Mephistopheles* of Mr. F. H. Celli is well conceived, and the conception is ably carried out.

The chorus has been good, and the band, if stronger in strings, would be unexceptionable. Herr Carl Rosa is a forcible conductor, and the *ensembles* generally of 'The Water-Carrier,' 'Faust,' 'The Lily of Killarney,' and the 'Sonnambula,' have been more efficient than at any former English opera performances.

The comic opera, 'Giralda; ou, la Nouvelle Psyché,' was produced on Thursday night; our notice of the performance will appear in next

week's *Athenæum*. In the meanwhile, some reference to the composer, the late Adolphe Adam, who died in 1856, in his fifty-fourth year, may be interesting. He was the son of a professor of the piano, for which instrument Adam was first trained, and then became a pupil of the Conservatoire, practising the organ. His first successful opera was 'Pierre et Catherine,' in 1829, at the Opéra Comique. When Laporte was manager of Covent Garden Theatre, Adam (his brother-in-law) composed the music for two dramas, 'His First Campaign' and 'The Dark Demon.' Adam also wrote the music for the ballet of 'Faust' in 1834; his greatest success was achieved in that year at the Salle Favart, in 'Le Chalet,' the libretto by Scribe, after which came, in 1836, 'Le Postillon de Longjumeau,' which has gone the round of Europe. 'Le Fiddle Berger,' 'Régine,' 'La Reine d'un Jour,' 'La Rose de Péronne,' were his next productions. He composed the music for a ballet, in St. Petersburg, for Taglioni, and also for another for Berlin. His 'Roi d'Yvetot,' in 1842, based on Béranger's ballad, and 'Cagliostro,' in 1844, had their day; but he failed signally at the Grand Opéra, with 'Richard en Palestine,' redeeming the check by his subsequent setting of 'Giselle,' for Théophile Gautier. His music, also, to 'La Fille du Danube' was very remarkable. His 'Giralda' appeared, in 1850, at the Salle Favart, and he had the advantage of Mdlle. Miolan (now Madame Carvalho) in the title-part. It is not necessary to recapitulate all the operas of this prolific composer, who had the narrowest escape possible of being a first-rate musician, but who must be considered as inferior to Auber, to Boieldieu, to Grétry, and to Hérold; although in all Adam's works there is a captivating vein of melody, and, ever and anon, dramatic effects. He set 'Falstaff,' but it was without the Shakespearian humour. His last opera was produced at the Bouffes-Parisiens. He speculated in the Théâtre National, and was nearly ruined by it. He left a posthumous book, 'Souvenirs d'un Musicien,' an interesting record of his career and that of his contemporaries. His 'C'alet' and 'Postillon de Longjumeau,' 'Le Brasseur de Preston,' 'Giralda,' and 'Toréador,' will keep his name on the list of national composers.

THE HEREFORD MUSICAL FESTIVAL.

NOT the least remarkable event of the week's doings at Hereford was the concluding Chamber Concert, in the Shire Hall, on Friday night (15th inst.). To find a large auditory deeply attentive to, and appreciative of, a programme which contained Mendelssohn's Overture in E flat, Op. 20, Beethoven's Quartet in C minor, Op. 18, No. 4 (dedicated to Prince Lobkowitz), and Mozart's Quartet in A major, No. 5 (of the set dedicated to Haydn), was indeed gratifying, as it showed that the love for high-class music is increasing in the provinces. To be sure the three works had the advantage of being executed by Messrs. Sainton, Ralph, Rendle, J. H. Reed (violins), Messrs. R. Blagrove and W. H. Hann (violins), and Messrs. Pettit and Aylward (violincellos) in the Overture; and Messrs. Sainton, Ralph, R. Blagrove, and Pettit in the two quartets. Their uniformity of style, perfect intonation, and finished execution, made a great sensation, and were the more remarkable after the massive choral and orchestral effects of the previous concert schemes. Between the instrumental items, Madame Edith Wynne, Miss Bertha Griffiths, and Mr. Cummings sang solos, accompanied by Mr. Townshend Smith. The love ditty, from the 'Indian Queen,' by our immortal Purcell, was encored, so artistically was it sung by Mr. Cummings; Balfe's playful duet, "Trust her not," a piquant setting of Mr. Longfellow's words, from the German, was sung by the two ladies, and just escaped a redemand. The 'Romeo and Juliet' love duet, by M. Gounod, is out of place in the concert-room, it requires the stage situation to be effective.

Friday morning's performance of the 'Messiah' was generally excellent, as regards chorus, band, and principals, and the Cathedral was, as usual, filled in every nook. The collections have been

the largest ever known; and the receipts for the secular and sacred concerts have been so great, that a balance over outlay will be handed over to the diocesan charities, instead of the stewards being called upon, as heretofore, to contribute to cover a loss. In fact, the 153rd Meeting of the Three Choirs on the ancient scale has been, from every point of view, a decided success; and the conductor, Mr. Townshend Smith, who showed much ability, both as administrator and as conductor, the Bishop, the Dean and Chapter, and the 119 Stewards, have all ample reason to be proud of the result, and to rejoice that they did not adopt the selfish views of the conceited persons who at Worcester, in 1875, caused such bitter dissensions by their attempt to destroy the interest and efficiency of these ancient gatherings.

THE MUSICAL PITCH.

WITH reference to our remarks last week on the diapason dispute (*ante*, No. 2551, September 16), Mr. Sims Reeves has favoured us with the following remonstrance, dated from Clifton Down Hotel, Sept. 17:—

"Why not be honest, and lay the blame (if blame there be) where most deserved? The fault lies with Sir Michael. Who raised the pitch of the Birmingham organ for the Festival of 1873, and, when too late, found that the instruments could not tune up to it? Who caused the organ to be lowered again for the accommodation of the orchestra of 1876? Sir Michael. You read Mr. Peyton's letter on the subject, in which he states that they must reduce the pitch of the organ in order to accommodate Sir Michael's orchestra, at Drury Lane. I repeat that the extravagantly high pitch is ruining the voices in England. In the time of Handel, it has been proved to have been quite a whole tone lower than at present. He wrote for people to sing, not scream. The organ at Hereford was tuned to the fork adopted by the Society of Arts, not the Normal Diapason. Why then single me out, and call it a whim of mine? Why not attack Madame Patti, Madame Nilsson, and others? The former insisted upon the pitch being lowered, but you have cared not to attack them. I will, therefore, ask you to correct your statement in your next, as I think your remarks are not only unkind, but they are also ungracious."

We did not ascribe to Sir Michael Costa the responsibility of the reduction of the pitch of the Birmingham organ, because we believe that Mr. Sims Reeves has been the main cause of an agitation that has led only to "confusion and discord," as we have stated. In 1870, the pitch of the organ at the Festival fell below that of the instruments; and therefore, in 1873, the standard was raised, on which Mr. Sims Reeves wrote to the *Birmingham Daily Post* (August 22, 1873), "that the organ has been tuned to the pitch of the only orchestra in the world that has so high a pitch, that of the Drury Lane Italian Opera." Now Mr. Sims Reeves in saying this was mistaken; some of the leading Opera-houses in Italy and Germany had the high pitch, and had had it for half a century. When the Birmingham Committee referred the complaint of Mr. Sims Reeves (the only one who did complain) to the conductor, Sir Michael Costa concurred at once with their suggestion to reduce the pitch to the reduced Drury Lane diapason. What was the result of this reduction? The choralists, instrumentalists, and conductor were made responsible for disasters and mishaps, which would never have occurred but for the whim of the tenor, for whom it must be called. We have known almost every singer of note in Europe for many years, and we never heard any of the great tenors, Rubini, Donzelli, David, Duprez, Nourrit, &c., not to speak of the *prime donne* (for sopranos and tenors are alone interested in the question of a high pitch), complain of the pitch. The first vocalist we heard protest against the raising of the pitch was the late Madame Caradori-Allan; it was in the Hanover Square Rooms, when 'Elijah' was rehearsed; and in answer to her appeal to transpose the air, "Hear ye, Israel," Mendelssohn shouted out "No, Madam! Decidedly no!"

A short time since, Herr Sontheim, of Stuttgart, induced the King of Württemberg to lower the pitch at a large outlay, but only three weeks after the reduction he begged to have the high pitch restored, as with it he could launch his c sharp from the chest much more effectively. To state that high pitch is ruining the voices in this country is simply absurd. Mr. Reeves's disability to sing when he is so often announced arises from a susceptible throat, not from the pitch; he can always transpose his airs, if he pleases. His sensitiveness about the pitch arises, we cannot help thinking, from a nervousness which he would often shake off if he appeared in the orchestra. As for the Hereford organ, we were assured by the officials that it was lowered according to a fork sent by Mr. Sims Reeves himself, with what consequences we all know. If Mr. Reeves had read the *Athenæum*, he would have known that Mr. Gye indignantly denied that Madame Patti was responsible for the reduction of the Covent Garden pitch. As for Madame Nilsson, it is well known that she follows in the wake of Madame Patti in all artistic doings, and as it was given out that the latter was the cause of, and had paid partly for, the Diapason Normal, the Swedish *prima donna* persuaded Mr. Mapleson to lower the Drury Lane standard. What happened? When 'Don Giovanni' was given one night, the new brass instruments being out of order, the conductor restored the old pitch, and the artists declared they never sang more at their ease. The *Athenæum* is quite aware of the importance of the uniformity of pitch, but our contention always has been, and is, that it is foolish to have various tuning-forks in use, according to the caprices of singers, and that uniformity can only be insured by legislative enactment, as in France.

At the Society of Arts the mathematicians got the better of the musicians, but the result has been increased confusion. The services of Mr. Reeves at the Birmingham Festival were lost through his pitch fancies, and he has not sung at Hereford, although his own tuning-fork was used for his special comfort. It is not the diapason which affects his organ; his inability to sing comes from other causes. The *Athenæum*, knowing the financial sacrifices he has made, has always defended Mr. Sims Reeves against attacks provoked by the many disappointments the public has had to endure; but if Mr. Reeves could get rid of this delusion about the pitch, he would still more often delight his admirers than he has done.

Musical Gossip.

THE next musical festival will be at Bristol, on the 17th, 18th, 19th, and 20th of the ensuing month.

THE twenty-first series of Crystal Palace Saturday Concerts will be commenced on the 30th inst., under the direction of Mr. Manns. Mr. Fritz Hartvigson will be the pianist, and Signor and Madame Campobello the vocalists. In our next issue, we shall refer to the interesting Prospectus just issued, which gives an account of the works and novelties that will be produced.

THE Royal Academy of Music will be reopened this day (Saturday) with an Address, to be delivered in the new Concert Hall by the Principal, Prof. Macfarren, Mus. Doc.

MR. FREDERIC CLAY'S new comic and spectacular opera, 'Don Quixote,' will be produced at the Alhambra Theatre, next Monday; the libretto is by Messrs. Maltby and H. Paulton.

HERR WILHELM, the violinist, who was the *chef d'attaque* at the recent Bayreuth performances, will appear this evening (Saturday) at the Covent Garden Promenade Concerts. A Meyerbeer night was given on Wednesday. Signor De Bassini, a son of the famed baritone who sang formerly at Her Majesty's Theatre, has appeared as a tenor; the other leading vocalists are Madame Rose Hersee, Miss A. Larkcom, and Signor Medica.

THE appearance of the Brixton Choral Society at the Westminster Aquarium may, perhaps, lead

to better results at the evening concerts than have yet been achieved.

THE season of the Monday Popular Concerts will commence on the 6th of November, but the prospectus has not reached us.

THE Court of Common Council has granted the petition of the Bells and Chimes Committee of St. Paul's Cathedral, and agreed to present the grand tenor bell in the new set, many city companies having contributed towards its erection in the belfry.

THE death of Mrs. Alfred Shaw, the celebrated contralto, once known as Miss Portans, is announced. She died at Hadleigh, where she resided since her retirement from the profession, having married a solicitor of that place. Mrs. Alfred Shaw sang on the Covent Garden stage with Miss Adelaide Kemble (Mrs. Sartorius).

MADAME ARABELLA GODDARD will give pianoforte recitals next month in St. James's Hall. Mr. H. H. Holmes will have pianoforte concerts at the Langham Hall.

THE Welsh National Eisteddfod, for 1877, will be held at Carnarvon. It is fourteen years since a festival took place in Carnarvonshire. The Chairman of the Committee is Sir Llewelyn Turner, and Canon Evans, Vicar of Carnarvon, and Mr. Hugh Pugh, Vice-Chairmen. The Gorsedd, or formal proclamation of the Eisteddfod, was made at the ancient castle (the birthplace of the first Prince of Wales) on Monday, in the courtyard, in the presence of nearly 2,000 persons. In the procession were the Naval Reserve, the militia, volunteers, and fire-brigade, with the Mayor and Corporation, the children of the various schools, members of the Friendly Societies, and bands of music; there was a strong muster of bards and orators; the circle of twelve symbolical stones was formed, the sword sheathed, and peace proclaimed by the chief bard. The Dean of Bangor, Mr. Eaton, M.P., and Sir L. Turner (Deputy Constable of the Castle) were present.

Two concerts have been given in the Hall at Penrhyn, under the patronage of Lord Penrhyn, Lord Clarence Paget, the Bishop of Bangor, Sir Richard Bulkeley, and others, in aid of the funds of the Industrial Training Ship for 400 boys, to be stationed in the Menai Straits, between Menai Bridge and Beaumaris: the artists who gave their services were the Misses M. Davies, M. Williams, M. Harries; Miss Day and Mr. Brinley Richards, pianists; the Bangor Choral Society and the Normal College Choir.

HERR WAGNER will superintend the mounting of his opera, 'Rienzi,' at Bologna, so that he has not given up his early works, as it has been so often asserted by his disciples. 'Rienzi' would be worthy of representation on the Italian stage here.

THE exhumation of the remains of Bellini from the Paris cemetery, Père Lachaise, was an imposing ceremonial. A deputation came from Catania, where the permanent interment will take place, to identify the corpse. The coffin was placed in a magnificent outer one, covered with red velvet and fringed with silver, and a plate was placed thereon, with the inscription, "Catania, grateful to Paris for restoring the illustrious dust, placed this stone, Sept. 15, 1876." Six orations were delivered, by the Marquis de San Giuliano (in French), the Commander Rosario Curro, the friend of Bellini (in Italian), Signor Gaetano Ardiziani (all three from Catania), Prince Grimaldi, the President of the Deputation; M. Léon Escudier, as Director of the Théâtre Italien; and M. Masson, for the Society of Authors and Dramatic Composers. Military honours were paid, Bellini having been a Knight of the Legion of Honour. The sarcophagus was afterwards taken to the Lyons station, with a procession. Prince Grimaldi, Prince de Castelreale, Prince de Sciarra, Baron Caccamassi, the Chevalier Caspece, Signor Florimo, of the Naples Conservatoire, M. Duval, the Prefect of the Seine, MM. Carvalho, Perrin, Léon and Ludovic Halévy; M. Halanzier, of the Grand Opéra; Signor Muzio, M. Joncières,

&c., were present. The features, after forty-one years, were quite recognizable. There will be a great festival at Catania on receiving the remains, which will be conveyed in an Italian frigate from Marseilles.

WE regret to learn that Ernst Lubeck, the famed pianist, is no more. He was of Dutch origin, the son of a Capellmeister. He was first heard in London, in 1860, at the Musical Union, and, for the last time, in 1869. He made professional tours in America, Germany, France, &c. He established a pianoforte school at the Salon Erard, in Paris. He composed several works, and had just finished a concerto, when his brain became affected, and for the last few years he was the inmate of an asylum.

THE Opéra Comique will be reopened next Saturday (the 30th), with the opera 'Piccolino,' in which Madame Galli-Marié will appear, and the new tenor, M. Duwast. 'Fra Diavolo' will be the next work. Hérol's 'Pré aux Clercs' and 'Zampa,' Halévy's 'Eclair,' Félicien David's 'Lalla Rookh,' will be the earliest revivals.

ADAM'S 'Giralda' will be revived at the Lyrique, with Mlle. Singelee in the chief character, to be followed by Flotow's 'Marta,' for the same *prima donna*.

THE reopening of the Sunday Popular Concerts at the Winter Cirque will take place on the 22nd of October.

A SUBSCRIPTION is being raised for a monument to Félicien David.

M. FAURE'S tour in the French provinces will commence this day (the 23rd inst.) at Nancy; the artists engaged with him are the sisters Badia, the tenor, M. Lévy; the baritone, M. Mouren; the violoncellist, M. Delsart; the organist, M. Le Beau; and the pianist, M. Henri Ketten.

MADAME ADELINA PATTI has contributed, by her singing at concerts, to the life-boat at Dieppe, of which she is the godmother, and M. Lebey, of Paris, the godfather.

M. PRILLEUX, the popular artist of the Opéra Comique, has died at Rosny, near Paris, in his sixty-second year.

DRAMA

THE WEEK.

QUEEN'S.—'Henry the Fifth,' with a Prologue taken from the 'Second Part of Henry the Fourth,' in Four Acts and Seven Tableaux.

FEW of the historical plays of Shakspeare have been so seldom seen on the stage as 'Henry the Fifth.' To its failure to secure a hold upon the public may be attributed the facts that it has been the subject of more experiments than any other Shakspearean drama, and has a history so curious as to be worth recalling. Betterton produced, in 1664, at Lincoln's Inn Fields, the 'Henry the Fifth' of the Earl of Orrery, a piece differing in many respects from that of Shakspeare, and played in it Owen Glendower. Garrick, in 1747, gave Shakspeare's play, and, resigning to Barry the part of Henry, contented himself with that of the Chorus. Kemble, in 1789, enacted Henry, and was succeeded in it, in 1819, by Macready. In 1830, 'Henry the Fifth' was chosen for what proved to be the last attempt of Edmund Kean to present a Shakspearean character. He failed utterly, broke down, and apologized to the audience for his inadequacy. Mr. Phelps included 'Henry the Fifth' in the noteworthy series of revivals which distinguished his management of Sadler's Wells. Treading in his father's footsteps, Charles Kean gave, in 1859, at the Princess's, 'Henry the Fifth' as his last Shakspearean production. The chief novelty con-

sisted in converting the Chorus into a woman, and assigning the character to Mrs. Kean. Now at last, when the piece is again revived, a fresh experiment is made, and Mr. Phelps, instead of playing Henry the Fifth, appears as Henry the Fourth in a portion of the 'Second Part of Henry the Fourth,' which, in the shape of a Prologue, is united to the play.

It is hopeless to fight the battle of fidelity to the text of Shakspeare. Colley Cibber's 'Richard the Third' has driven the original play out of the field. Managers will tell you, in answer to remonstrance, that, while a fair chance of success attends a production of Cibber's version, the play as Shakspeare wrote it has never, since the Restoration, proved other than a failure. At present, accordingly, those who wish to see Shakspeare on the stage, must resign themselves to take what they can get, a lesson the less difficult as there are no actors fit to speak the words of Shakspeare were they in every case restored. Against the proceeding adopted by Mr. Coleman, however, a protest may be lodged, upon the ground of expediency as well as that of justice to an author. From the latter point of view, it is treating a dramatist but scurvily to assume that what he intended for the climax of one play can be converted into the opening scenes of another; from the former, a mistake is made in commencing with elaborate scenes of decay and death a drama the whole spirit of which is action. It is doubtful, even, whether the advantage of including Mr. Phelps in the cast will compensate for the feeling of weariness and depression that is stirred by the funereal gloom of the opening situations.

Against the pageantry introduced, little can be urged under existing conditions. In the historical plays it is easy and pardonable to assist the spectator by presenting him with a species of panorama of the events which furnish a background to the action. That Shakspeare would have accepted a certain measure of scenic display as an aid, appears from his Prologue, wherein he asks the spectators to

Piece out our imperfections with your thoughts;
Into a thousand parts divide one man,
And make imaginary puissance:
Think, when we talk of horses, that you see them
Printing their proud hoofs i' the receiving earth.

So far, then, as it is good—and some of it is good—the pageantry introduced into the play is pardonable. The ballets, even, which provoked a storm of disapproval, might be justified from the standpoint now accepted with regard to Shakspearean representations. To receive with a masque Henry the Fifth returning with his French bride from his marriage in Troyes is a notion that Shakspeare himself would not have scouted, and to give an emblematical ballet in the presence of Charles the Sixth is an idea not so especially ridiculous as to merit the stern and almost savage condemnation it received. These views must be taken as applicable only to the existing condition of affairs. If we had actors capable of giving with perfect delivery and fitting accompaniment of action the speeches Shakspeare has written, and a public willing to accept an entertainment of the class thus formed, we should be sticklers for it. In the absence of both, we take what we can get, so long as it is moderately good in its class. The outcry about burying Shakspeare beneath upholstery has not much meaning. If we had actors

who could render the great Shakspearean creations, they would not be buried. It is the dimensions of the men, not those of the ornamentation, that are responsible for the feeling evoked. In France the Government accords certain theatres a subvention, on the express condition that it shall play a certain number of pieces belonging to the classic drama. Without such aid, the French public would see little of Molière, and less of Racine and Corneille. In place of such assistance, English managers have turned to spectacular effects, and out of the taste of the public for display have gained money that enables them to keep Shakspeare, in a fashion, on the stage. If the question is asked, however, whether it is worth while to present him at all in the manner in which he is now seen, it is not easy to answer.

No purpose is answered by describing at length the manner in which the play has been broken to pieces and reshaped. Some of the alterations are absurd enough; in favour of others something might perhaps be advanced. To the majority of the audience the play is wholly spectacle, and Shakspeare's words might almost be regarded as a species of incidental music. Much of the spectacle is good, though the brightness of the dresses and the armour destroys the *vraisemblance*, and leaves a sort of impression that we are contemplating a waxwork exhibition arranged so as to present an imitation of action.

In very few of the characters is there anything to call for favourable comment. In the part of the boy who waits upon Bardolph and his associates, Miss Kate Phillips was excellent. Miss Fowler exhibited, as *Katharine of Valois*, a mixture of coquetry and timidity, which was thoroughly natural and appropriate. Mr. Phelps gave the dying speeches of *Henry the Fourth* in his usual manner. It is a difficult task for an artist, however competent, to obtain strong effects when he is perpetually recumbent, and has always to speak with the voice of a moribund. It is different when the decline is gradual, and weakness in the last scenes can be contrasted with comparative strength in those which precede. Mr. Coleman, who plays *Henry the Fifth*, is wrong in his method. His lightness is too debonair, and his changes of voice and action are too frequent and too marked. Mr. Ryder doubled the part of *Sir William Gascoyne* in the Prologue, and *Williams* in the play, and spoke with a clearness of utterance the younger actors might do well to copy. In the subordinate parts, the incapacity to speak a line of blank verse, usually displayed on similar occasions, was painfully obvious. Miss Leighton, as the Prologue, spoke with clearness and effect, but was unnecessarily vehement. A lighter and less tragic tone would have been more effective.

The house has undergone renovation and improvement. An original Prologue, delivered by Miss Leighton, has so much more vigour and spirit than ordinarily belong to this class of composition, it is to be regretted its author's name was not announced. The leading idea is good, and some of the lines are capital.

Erratum.—For "Clouet IV.," p. 377, col. 1, line 12 from the foot, read *Clouet III.*

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